

AIRFIX magazine

SEPTEMBER 1971

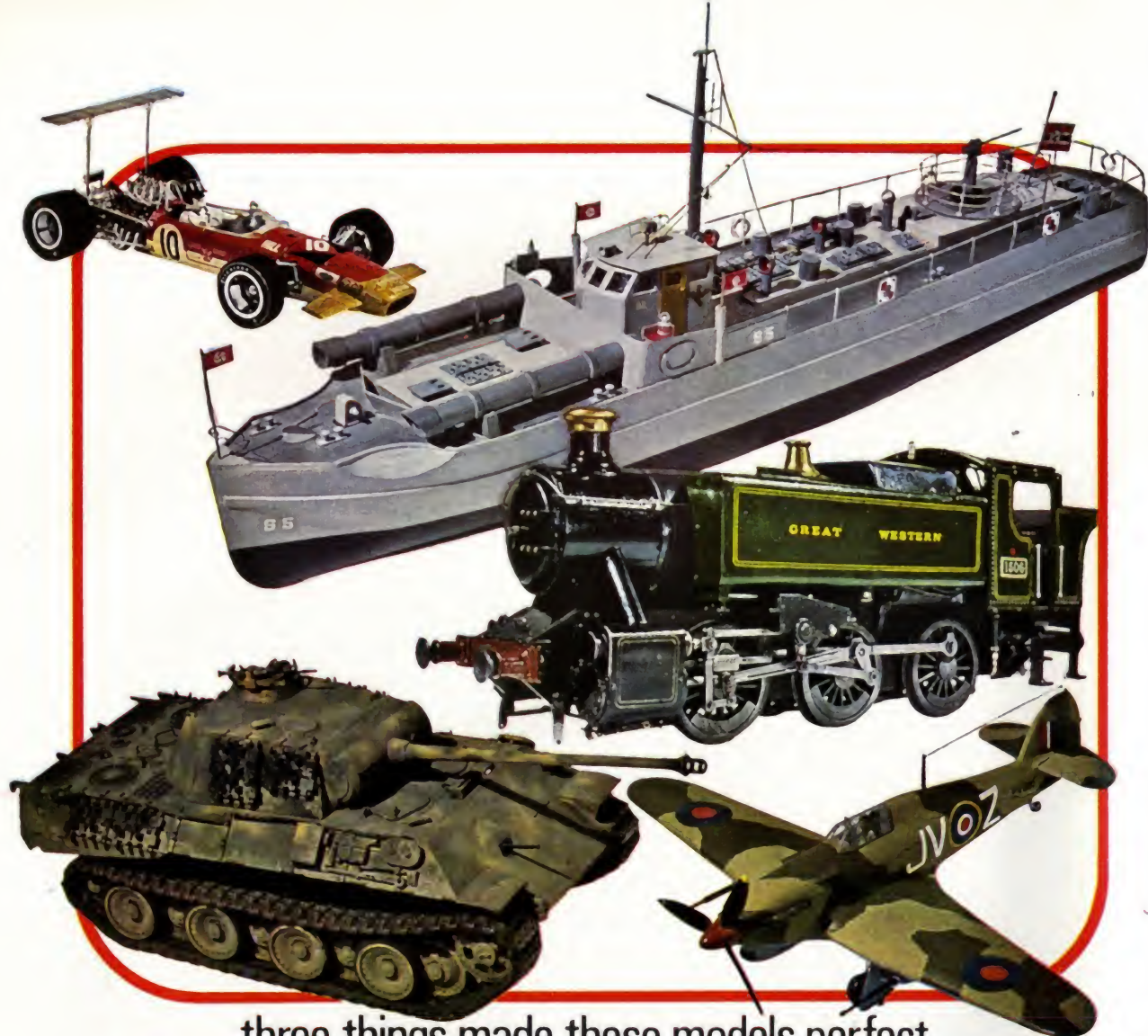
FOR PLASTIC MODELLERS

15p
MONTHLY



**IN
THIS
ISSUE**

Austin armoured car and German soldiers
Detailed coverage of the Vought Corsair



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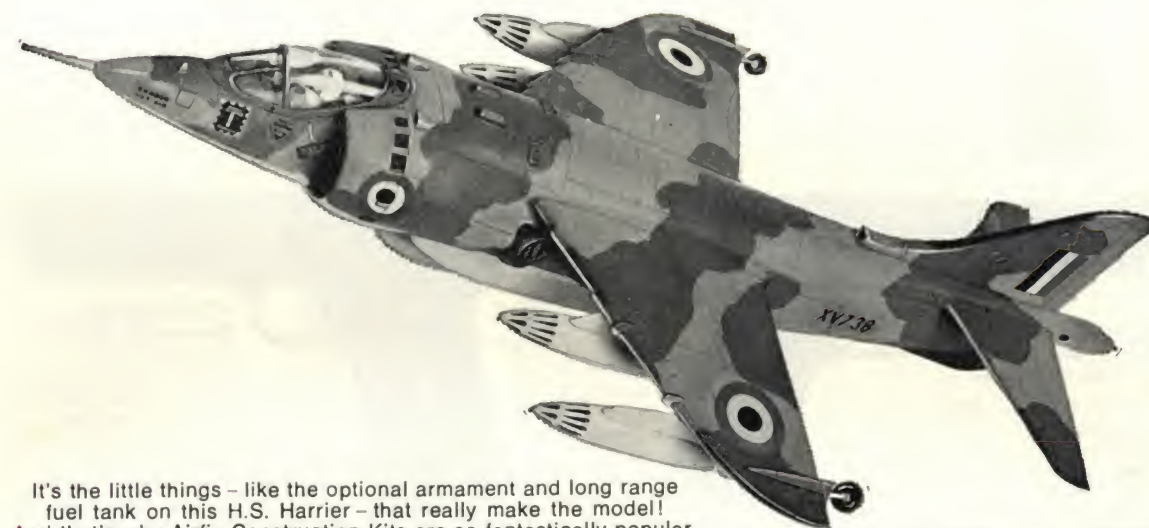


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Top left: Spitfire. Bottom left: E. E. Lightning. Right: Hercules



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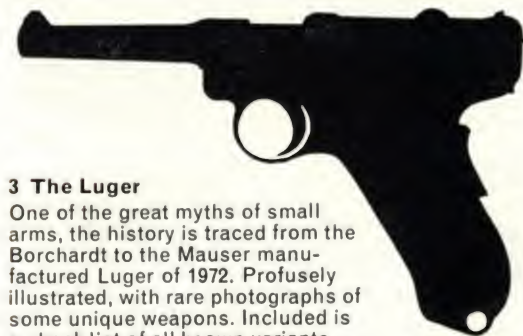
1 The Webley Automatic Pistol

The first Profile in the series spans the life of automatic pistols from the grand failure of the 'Mars' to the genius of the pistols designed by Dr Jurek in the 1950's.



2 Browning Automatic Pistols and the Hi-Power

The day that John Moses Browning joined *Federation Nationale Fabrique* saw the beginning of a long line of famous automatic pistols, all of which are fully documented and illustrated.



3 The Luger

One of the great myths of small arms, the history is traced from the Borchardt to the Mauser manufactured Luger of 1972. Profusely illustrated, with rare photographs of some unique weapons. Included is a check list of all known variants.

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4 The Thompson Submachine Gun

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5 The Colt .45 Automatic and its Development

Possibly J. M. Browning's most successful design for an automatic pistol. This Profile gives the development history—including the 1905 version described as 'dangerous and unreliable' by a British Committee—to the present day G.I. sidearm.

6 Walther Automatic Pistols

This little known early Walther pistol production is fully described and illustrated. The P.38 and its many variants is included.

7 Heckler & Koch (An Armoury)

8 Erma Produced Submachine Gun

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11 The Winchester Arms Company

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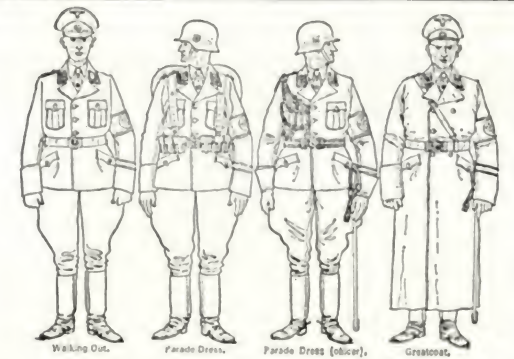
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The black parade dress of the SS-VT. Full colour details
are given in the text opposite. Tunic is shown in detail
below. The first earth grey service tunic of the SS-VT
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Left: Right: Army pattern aigillette worn by
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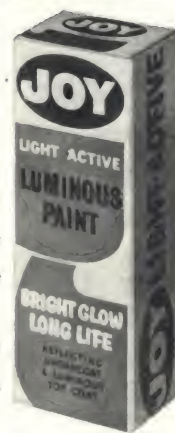


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AIRFIX

magazine

FOR PLASTIC MODELLERS

September 1971

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Editor: Chris Ellis

Cover Picture

For the first time in several years model railway enthusiasts have the luxury of a second exhibition at Central Hall, Westminster, in the same year (August 26 - September 4), perhaps reflecting the increased interest in model railways which has been evident of late. Traditionally September has always been the start of the 'active' season in model railways, and anyone looking for new ideas in this field might well consider electric traction which is by no means as modern as younger readers might think. Our picture shows a pleasant vintage electric locomotive of the Swedish State Railway (Statens Järnvägar) on shunting duty at Uppsala earlier this year. This wooden-bodied 2-6-2 is No 176 of class Dg, 144 of which were built in the period 1925-1936. This particular type is not available in model form so far as we can ascertain but some quite similar locomotives are modelled by several European model railway firms.

(Photograph by Michael Andress).

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Advertisement Manager: Jim Boyd
Tel: 01-405 3611
September 1971



Short SC1, XG900, seen in the hovering mode at RAE Bedford. The aircraft completed 700 flights totaling 135 hours before being given to the Science Museum for preservation (RAE Bedford).

THE Short SC1, XG900, was handed over to the Science Museum by the Director of the Royal Aircraft Establishment Farnborough at a ceremony held in the Museum in June. The aircraft will join other exhibits held by the Science Museum, including the 'Flying Bedstead', Britain's first vertical take-off experimental aircraft. It is difficult to imagine that an aircraft like the SC1, which was designed as recently as 1954, should now be preserved in a museum. The advance of aviation in this technological world, however, is so rapid that aircraft can become museum pieces within a decade.

First Practical VTOL Flight

Two Short SC1s were built at Belfast following the successful flights of the Rolls-Royce 'Flying Bedstead' in 1953. Short Brothers' tender to build a VTOL research aircraft was accepted a year later and the first flight of XG900 without its lift engines took place on April 2, 1957.

The other aircraft, XG905, carried out the first tethered hover in May 1958 and its first unrestrained hover in October of that year. Since then, both aircraft have been engaged on research projects and XG905 is still flying.

Apart from the 'Flying Bedstead' (known officially as the Thrust Measuring Rig, for security reasons) another, but little known experiment, in the use of jet deflection was made on a Meteor aircraft which was capable of supporting about half its weight by deflecting the main engine thrust. This allowed the experimenters to look at control problems at speeds down to about 65 knots—two-thirds of the normal stalling speed of the Meteor. From this work the present-day Harrier developed.

To fill the gap in the speed range and to produce a viable aircraft fully capable of vertical or normal take-off, tenders were invited from industry for the design and construction of a research aircraft capable of controlled flights at speeds up to about 250 knots with a full VTOL capability. The Rolls-Royce RB108 lift engine was specified, Shorts received the contract and the first aircraft was built, employing four lift engines and one for forward flight.

There were many problems to be overcome by both scientific staff and pilots. It was not known, for example, how well a pilot could judge where and when to start decelerating to arrive at

XG900 on display in the special exhibition at the Science Museum. In the foreground is a sectionalised Rolls-Royce RB108 jet lift engine (Science Museum).



the hover over a chosen spot. Of course, he could do this given unlimited time but even the little three-ton SC1 uses fuel at the rate of 20 gallons a minute while hovering, so it is important from the economic point of view that not too much time is spent in the landing transition. The pilot also had to get used to extra controls as, apart from a control column, rudder bar and throttle, the SC1 had extra engine controls for the hover mode and the pilot had to get used to a different sort of control system.

After completing 140 flights at Sydenham airfield, Belfast, XG900 was handed over to the Royal Aircraft Establishment at Bedford in January 1961. XG905 followed. Both aircraft continued a programme in which all aspects of VTOL flight were investigated. After 135 hours in the air and 700 flights, XG900 completed its part of the research programme, and it was suggested that the Science Museum should preserve it for posterity. The SC1 has played an important part in the development of VTOL flight and has proved that it is possible to operate with confidence into very restricted sites under difficult weather conditions. By comparison with the present-day Harrier, the SC1



appears outdated. But if it had not been for the early experimental work on this aircraft, the Harrier, although it employs a different system for its vertical flight, would not have reached operational service.

Canadian Air Race

Sixty-four aircraft came under starter's orders on July 1 at RAF Abingdon for the start of the UK-Canada air race. First away was an AeroStar 601 which left at 5.30 pm. Loaded with extra fuel, the aircraft took the full length of the runway to lift off after Pierre Trudeau, the Canadian Prime Minister, gave the starting signal by telephone from Ottawa. Aircraft left at regular intervals throughout the night until the last aircraft, a Lear Jet flown by Mr C. Lacy, brought up the rear at 9.50 am the following morning.

Competitors were split into four groups, 23 entries being in Class A for single-engined piston aircraft up to 5,000 lb. The other categories were for twin-engined piston aircraft, turbo-prop aircraft and pure jets. Twelve pilots chose to fly solo for the whole distance.

The outright winner of the race was Herr J. H. Blumschein flying a Merlin III. Second place went to Kim Philips and Veryl Mitchell in an Irish-entered Twin Comanche. A Cessna 310 flown by P. W. Reames came in third and the first Canadian crew to reach Vancouver were Messrs Wright and Germain flying an Islander.

The line-up at Abingdon before the race brought some very interesting aircraft for the privileged few to inspect. Unfortunately, the airfield was not open to the public and it was also disappointing that most of the take-offs were during the hours of darkness. Among the competitors was a Harvard IV, CF-UZG, literally plastered with slogans applied by its sponsors, and an immaculate Beech D17S. This aircraft had an all-blue colour scheme with a red and white cheat line.

The outright winner won \$50,000 plus the Prime Minister's

AIRFIX magazine



Above: The Britten-Norman Trislander, G-AYZR being prepared for the UK-Canada air race at RAF Abingdon. At the end of the race this aircraft was delivered to the North American distributor at Fort Lauderdale, Florida. Airfix will shortly be releasing a model of the Islander, the Trislander's progenitor.

Trophy. Second and third prizes were worth \$10,000 and \$5,000 respectively.

First Trislanders Delivered

The first two Britten Norman 18-place Trislanders have now been delivered, one to a B-N distributor in the United States, and the second to a leading Islander operator in the UK. The American delivery was privately entered in the UK-Canada Air Race by the Rt Hon Hugh Astor and Sir William Dugdale. The aircraft was captained by Joe Blythe for the race, who took the aircraft on to Fort Lauderdale after its arrival in Vancouver.

Both of the new three-engined aircraft flew from Bembridge on June 29. The second aircraft, G-AYWI, went to Staverton, Gloucestershire, where it will begin crew training for Aurigny Air Services in Jersey. Three Trislanders have been ordered by this company and the first is due to enter regular service on November 1.

Full UK type certification for the Trislander was awarded on May 14 and cleared the aircraft before public transport operation with a minimum crew of one pilot and a maximum load of 17 passengers in both VFR and IFR conditions.

Humbrol Share Biz-Jet for European Sales Tour

Humbrol Limited, the well-known model paint manufacturers, joined with two other manufacturing companies from Hull in using a Hawker Siddeley HS 125 business jet aircraft recently to demonstrate how an aircraft of this type can be used to increase sales by a group of otherwise unconnected companies jointly operating their own aircraft. In seven days the aircraft flew 16,000 miles and visited 18 cities, where representatives of the three companies contacted their local agents and sold their products. The object of deliberately scheduling such a high utilisation—about four times the current average for individually owned business jets—was to show that joint operation can be achieved with adequate capability in reserve to retain flexibility. By spreading the fixed annual costs of a single aircraft over a much higher number of flying hours the total cost per flying hour is proved to be very much lower and each partner's flying was significantly cheaper.

During the trip, Humbrol salesmen broke all the company's export records by selling over a million and a half tinlets of model paint. The HS 125 was used as a flying seven-seat air-conditioned board room equipped with food and drink, which was used for conferences at airports where the aircraft stopped for only one or two hours. Other visits were made of longer duration with overnight stops and the opportunity to entertain customers. The flight plan ranged from Helsinki in the north to Athens in the south and from Belgrade in the east to Lisbon in the west. The aircraft used for the venture was the 250th HS 125 to be built, registered G-AYOK.

Right, top to bottom: This beautifully maintained and highly decorative Harvard IV, CF-UZG, was flown solo by Mr R. Cockburn, a Canadian, in the Vancouver race. Winner of the race was this Merlin III flown by Herr Blumschein from Germany. One of the most attractive aircraft entered was this Beech D17S. It had an overall blue colour scheme with a red and white cheat line. The Canadian Armed Forces entered one of their Fan Jet Falcons. The aircraft was one of the last to leave Abingdon and was entered in Class D for pure jet aircraft (Aviation PhotoNews photos). One of the most unusual aircraft to appear at this year's Tiger Meet at RAF Upper Heyford was this Portuguese Air Force T-33 in an overall grey colour scheme with dayglo patches.



Vought Corsair

A detailed coverage for aircraft modellers

BY ALAN W. HALL

Part 1: Aircraft in Fleet Air Arm and New Zealand Service

A POPULAR aircraft with ground crews and aircrews alike, the F4U Corsair is best known for its actions in the Pacific area during World War 2. Apart from this, however, it served with distinction on Royal Navy aircraft carriers in North Atlantic and home waters, taking part in a number of actions where its rugged qualities and ability to deal out punishment to enemy aircraft did much to help the success of operations such as those against the *Tirpitz* when that battleship was sheltering in Norwegian waters.

The Corsair became the Fleet Air Arm's main Fleet fighter in the Pacific, serving on all of the carriers committed to the offensive against Japan. The Royal New Zealand Air Force (RNZAF) also used this type almost exclusively in actions in the Solomons. Five squadrons were used, their main duties being fighter bomber and ground strafing work. Two other RNZAF squadrons also had Corsairs but these did not become operational before the end of the war.

Unlike the US Navy Corsairs, the Fleet Air Arm modified almost all theirs, except some of the early Mk Is, to have clipped wings so that they would fit into the hangar decks of the British light fleet carriers and 'Woolworth' escort carriers. New Zealand aircraft, on the other hand, retained the fullspan wings but had the tail hooks removed due to the aircraft being exclusively land-based.

A total of 2,012 Corsairs were supplied to the United Kingdom and served in 19 squadrons of the Fleet Air Arm. These included:

F4U-1	95	Corsair I	Vought-built
F4U-1A	510	Corsair II	Vought-built
F3A-1D	430	Corsair III	Brewster-built
FG-1D	977	Corsair IV	Goodyear-built

New Zealand aircraft were Vought-built F4U-1Ds and 425 were supplied under Lease-Lend agreements.



CORSAIR MODELS

There are several extremely good Corsair models available in either 1:72 or 1:48 scale. All of them are of US Navy versions and therefore need some modification if they are to represent Fleet Air Arm or RNZAF aircraft.

The Airfix model represents a F4U-1D similar to those supplied to the RNZAF and therefore it is an easy matter to remove the tail hook during construction to achieve accuracy.

On Royal Navy aircraft, however, more drastic surgery has to take place. The nearest equivalent is either the F4U-1A Corsair II or the F3A-1D Corsair III. Here the cockpit area remains unchanged but the wings have to be modified.

To do this, both wing halves are assembled and when dry the tips cut off with a saw at a point along the last panel line nearest the wing tip. The rough edges are then smoothed with sand paper to correspond with the profile in the drawings.

The Corsair I also involves a little work to get this correct if starting with the basic Airfix model. Here a new canopy will have to be moulded and modifications made to the cockpit area. The wing tips may be left unaltered as the photographs show.

The rear part of the cockpit area is cut vertically to provide space for a longer and shallower canopy. After cleaning up the edges with sand paper, a mould is made from balsa to fit the new canopy shape, working from the plan for outline and fitting the model. Allow the thickness of the acetate sheet to be used for the new canopy when making the mould, otherwise the result will be a canopy that is too large. Similar modifications will have to be made to produce a Corsair IV. In this case the canopy is bulged more than on the Mk II and III.

In all Fleet Air Arm aircraft the bomb cradles under the wings can be removed but a central pylon can be made and a piece of balsa shaped to represent a long-range fuel tank. All RN aircraft had the capability of having these tanks fitted and for many Pacific operations they became standard. The New Zealand Air Force aircraft retained the bomb cradles and also had the long-range tank capability. A photograph on page 10 of *Profile No 47* shows these well.

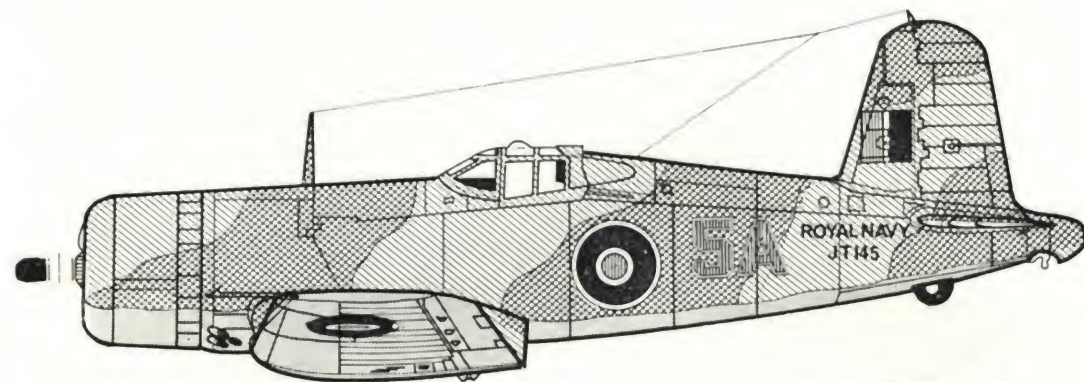
PAINTING DETAILS

Most of the aircraft used by the Royal Navy in the Pacific were straight off the American production lines and were painted in standard US Navy schemes. The Corsair IVs particularly had the overall sea blue (FS 15042) colour scheme with the roundels similarly painted.

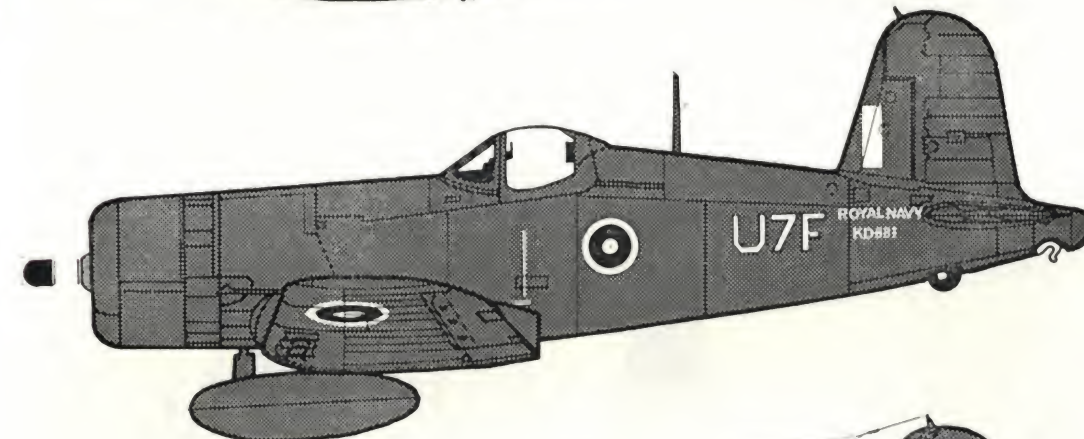
Most Atlantic and a few of the Pacific aircraft of the earlier marks were specially painted for FAA use and appeared in Slate Grey and Extra Dark Sea Grey camouflage. Naturally the rigours of sea air, spray and continuous use changed the colours so much that photographs often appear to show that a single overall colour was used. Undersides were usually in Sky Type 'S'.

RNZAF aircraft suffered considerably from weathering. These were also painted in standard US Navy colours but after delivery

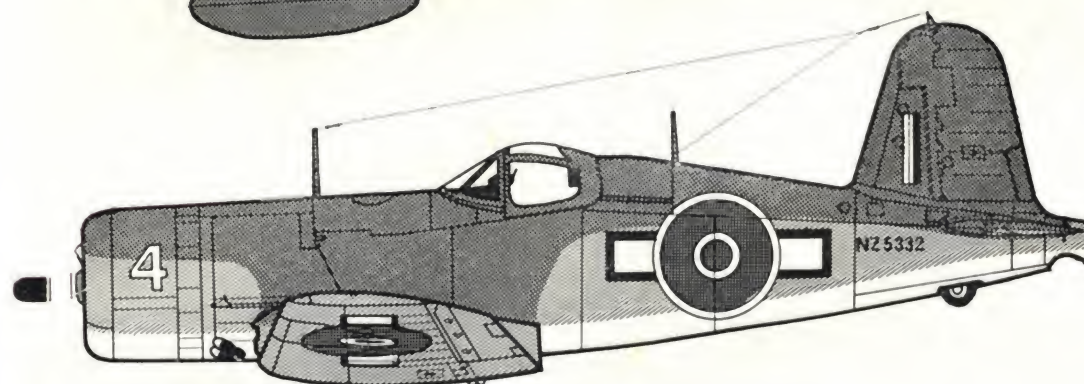
Continued on page 23



Vought
Corsair I
JT148:5A
1835 Sqn.
Serial black,
code dark red
outlined in
white.
5A repeated
on u/c doors.



Vought
Corsair IV
KD681:U7F
HMS Vengeance
1945.
Overall Sea
Blue with black
spinner.
Drop tank
optional.



Vought
Corsair II
NZ5332:4
No 4 OTU,
RNZAF,
Ardmore, NZ.
Original US
colours shown—
actual aircraft
weathered and
faded. Note
tail hook
removed.



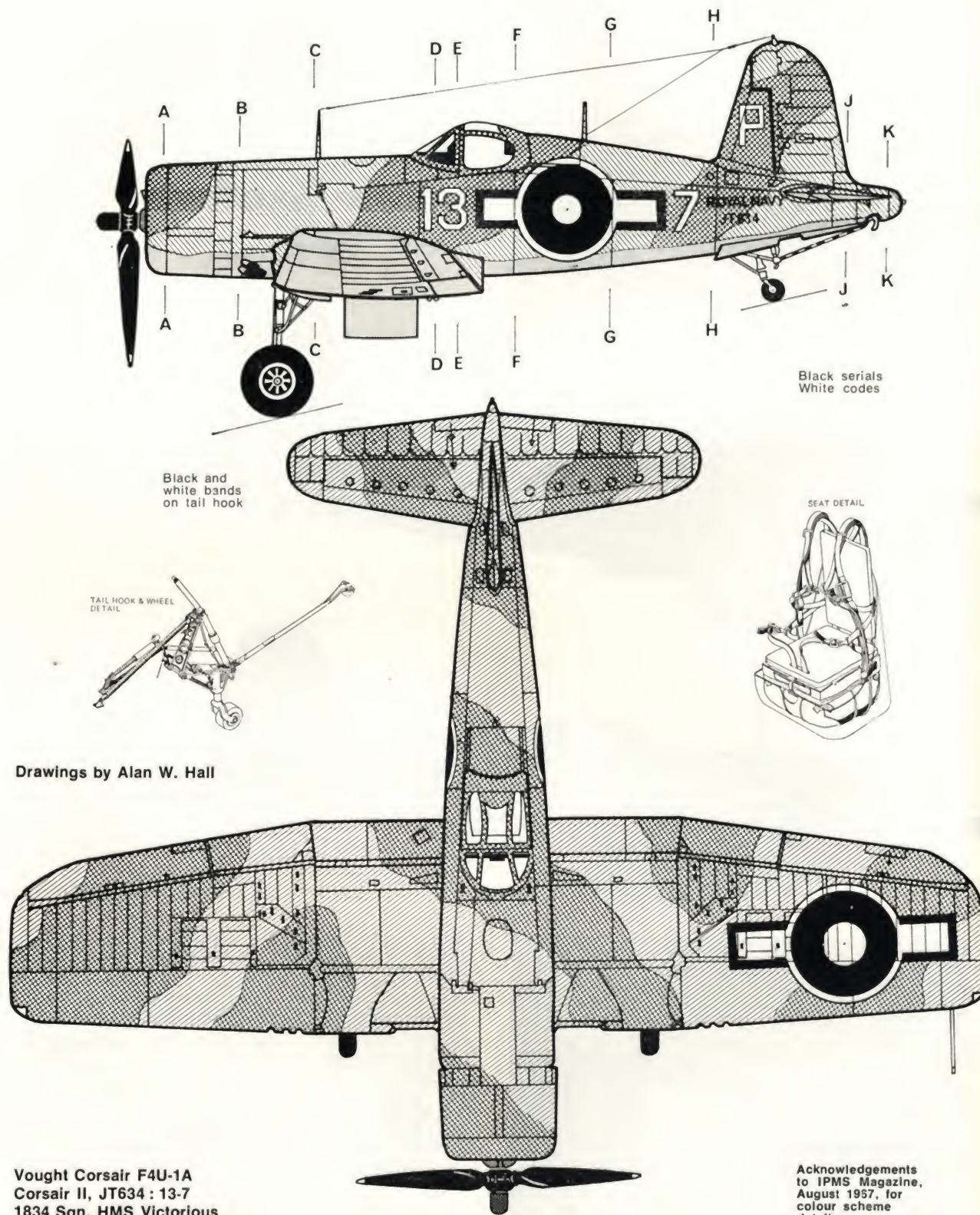
Top of page: Corsair Is of the Fleet Air Arm showing unmodified wing tips and slate grey and extra dark sea grey camouflage. Squadron codes were in white, serials in black. Above: A Corsair II belonging to No 1841 Squadron RN taking off from HMS Smiler in June 1944 (photo via C. J. Norman).



September 1971

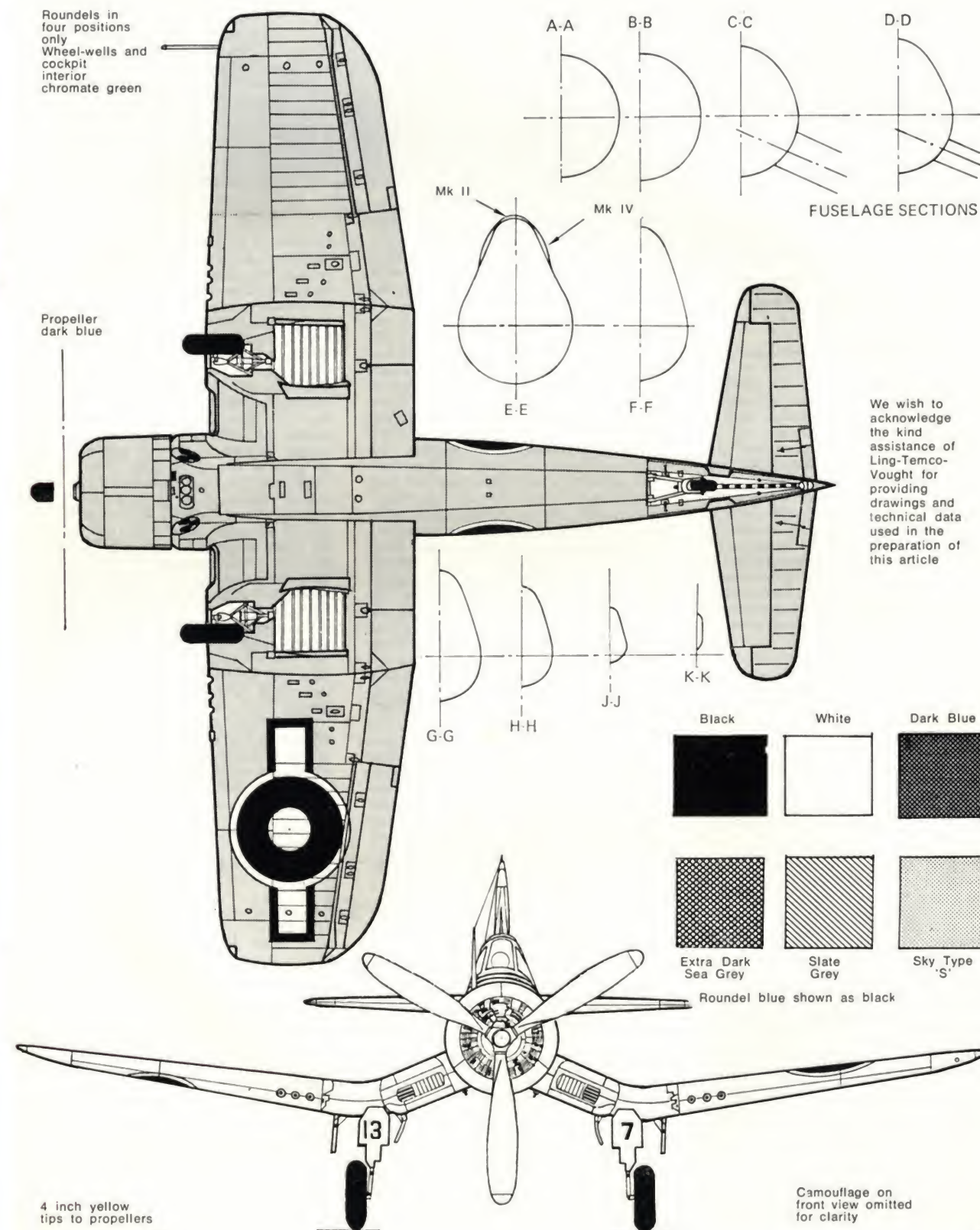
Left: The overall sea blue paint scheme similar to that used by the US Navy can be seen in this picture of Corsair IV KD244 belonging to No 1842 Squadron from HMS Formidable (photo Lt Cdr Wilts via R. C. Jones). Below: Transfers for a RNZAF Corsair are included in the Almark range as shown here on an Airfix model (Richard E. Gardner).



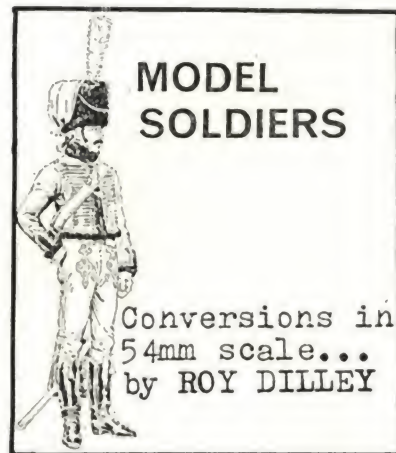


Acknowledgements to IPMS Magazine, August 1957, for colour scheme details

AIRFIX magazine



September 1971



WITH Autumn and the 1971-72 modelling season fast approaching it is time once again to take stock of our resources, sort out our tool-kits and spares boxes, and prepare our programmes for the coming months. A number of readers have told me how useful they found the article that I wrote at this time last year, and which gave my thoughts on the working out of a modelling programme, together with suggestions for items which could usefully be included in tool kits, and general working practice. There is little doubt that a well-planned project has a greater chance of being brought to a successful conclusion than one which has just been developed in a haphazard way, and without undue repetition of what I wrote last year, I would emphasise that I have always found that the application of a little forethought and system in plans for the modelling season has increased the enjoyment and satisfaction to be obtained from the hobby by a very considerable amount.

The programmes for the modelling societies during the next few months also promise to be extremely interesting. On September 18 at Leamington Spa will be held an ambitious competition event organised by the International Plastic Modellers' Society. Competition classes include several for military vehicles and figures, and there are sure to be many superb entries. The Manchester branch of the British Model Soldier Society are holding their Annual Branch Competition on October 26 at the Midland Hotel, Manchester, and here again many exhibits of outstanding quality are expected. Soon after Christmas the Model Engineering Exhibition at Seymour Hall in London will reflect in its competitions and displays the permanent place that military modelling has now taken alongside all the other traditional aspects of modelling.

New members are sure of a hearty welcome at meetings of all the hobby societies and groups throughout the country, so for the benefit of readers who have not yet joined such a group but would like to do so and get together



Realistic posing of the MG 42 machine gun team is apparent from this view. Upper view opposite shows the third man in position in white undercoat before final painting.

with people having similar interests. I have given at the end of this article a short list of membership secretaries of the principal modelling societies in the UK. All of them, I hasten to say, are open to members from any part of the world, and maintain fraternal links with similar groups in many countries. Gone are the days when modellers would labour away in solitude, or meet in small, rather shamefaced groups in the back rooms of various local hostels! Today, manufacturers, the press, and the committees of all the hobby societies are working for the benefit of modellers everywhere, so take advantage of their efforts.

Interest in the second world war as a source of modelling subjects shows no sign of abating, and the excellent work produced by enthusiasts for this period has been a feature of many exhibitions and competitions in recent months. No one who has seen them will forget the realism achieved in the presentations of such craftsmen as John Sandars, Max Hundley, W. G. Evans, and others. Their dioramas reflect the veritable face of the war, and so precisely that one can almost smell it, whilst Arthur Woolford's little models of servicemen exactly convey the indomitable spirit shown by so many girls at that time. All these master modellers have a genuine appreciation of the atmosphere of World War 2, and it shows very clearly in their models and dioramas. Their comment and advice are freely given at society

meetings to all who care to avail themselves of it, and the standards they achieve set worthy goals at which the novice can aim.

Inevitably, I suppose, the German forces come in for a great deal of interest and attention, and some enthusiasts specialise in collections of Wehrmacht types and equipment. Manufacturers have not been slow in catering to some extent for this specialised interest, and there are probably more commercially produced models of German soldiers, tanks, and general equipment on the market than there are of any of the other combatants.

However, for the most part, German soldiers are depicted in model form as they appeared, complete with knee-boots, during the earlier part of the war, whilst the ankle-boots and gaiters of the later years have been ignored by the designers. With the recent issue by Almarks of their American infantry set, this omission can be repaired, for by combining parts from the American and Panzer-Grenadier sets it is possible to produce very authentic late war German infantry, and I have chosen to depict a machine gun team of this period as the conversion subject this month.

The figures shown are wearing steel helmets, but it would be quite correct to give them the peaked cap (einheitsmütze) or to vary the headgear among the members of the team. Similarly, for the period selected, the tunics worn could have been either the older pattern with dark green 'badge-cloth' collar and shoulder-straps

and pleated pockets, or the new pattern in which the collar and shoulder-straps were the same colour as the tunic, and the pockets were without pleats. The light machine gun could have been the model MG 34, or the MG 42, a development of which is still in service with the present-day German Army. In the photographs, one figure is shown before painting in white undercoating only, but the detail can be seen quite clearly. The other figures are completely painted just to show beginners that careful painting is of key importance with scale figures. This should give some idea of the work involved after the basic figure is completed. Suggested ideas for displaying the group would be to depict them in action behind a broken-down wall or hedge, in a ditch, a ruined house, or at the edge of a field. Airfix are shortly to produce a suitable 1:32 scale 'strong point' model of this kind. Figures in a variety of action poses can be produced by swapping around of bodies and legs between the items contained in these two sets.

Conversion 1

For the light machine gunner, figures required are Almarks' German and American lying firing.

Having cleaned off any mould lines, cut both figures completely in two at the lower edge of the tunic skirts, ensuring that the German's bayonet scabbard and entrenching tool handle are undamaged. Cement the torso of the German to the American's legs, using a tube polystyrene cement, and allowing time for the resulting joint to set thoroughly (Fig 1). Trim off the LMG from the German right arm, leaving only the pistol grip grasped in the hand, and fix the arm in place, also attaching at the same time the left arm from the American LMG pair, thus achieving the correct firing position (Fig 2). A suitable machine gun can now be selected; I used a metal one from Michael's Models, but a spare Tamiya plastic item will do very well, or one can be made up from scrap. Remove the pistol-grip, and trial-fit the gun to the arm, but do not secure it permanently until painting has been completed and the group is fixed to its base. This will ensure that any little adjustments to suit the ground contours of the base can be made without damage to the figure. Now drill out, trim, and sand down a steel helmet or cap from the German set, and cement it in place. Then make a hilt for the bayonet from scrap plastic and fit it to the scabbard. Check that all stages have been carried out, carefully clean up all the joints and fit the figure to a temporary base ready for undercoating and painting.

Conversion 2

Next we need the machine gun loader and for this the figures required are the German and American crawling men.

Clean off all mould flash from both figures, then remove all equipment from below the waist of the American (Fig 3).



Carefully cut off and clean up the entrenching tool, water-bottle, and bread-bag from the German figure, setting them to one side for the moment. Now cut through both figures at the waist, following the top edge of the belt. Then fix the German upper torso to the lower part of the American, again allowing the joint to dry out thoroughly. Having cut off the German's head, re-fix it turned more to the right, as if looking at the machine gun, and then attach the entrenching tool to the figure's left hip, the bread-bag immediately behind it, and the water-bottle over the right hip. Choose suitable arms from either set for the loading attitude (see photo), and cement them to the figure, adding an ammunition box (I used a spare Tamiya one) to the left arm. A Mauser rifle can now be cut from one of the arms in the German set, trimmed, and fixed to the back of the figure with a sling of thin plastic strip passing over the left shoulder and around the chest. Fix suitable headgear, and attach the figure to its painting base.

Conversion 3

Lastly comes the NCO of the gun team and the figures required are the German and American kneeling men.

Remove any mould flash from both figures, then cut the entrenching tool from the German's right hip, putting it carefully to one side. Repeat the operation with the water-bottle, then cut and remove the upper torso at the waist. Completely clean off all equipment from below the waist of the American and again sever the figure at the belt-line. Now cement the German upper body to the American lower portion and allow to set hard, before attaching the German water-bottle and entrenching tool as in conversion 2. A set of Schmeisser ammunition pouches can now be fashioned from scrap plastic and cemented to the right side of the belt in front. Choose suitable arms from either set, and fix a pair of binoculars made from scrap, to the left hand. Alternatively a spare arm from any of the Tamiya figure sets can be used. Having cemented both arms in position, add a Schmeisser machine pistol (MP 38 or MP 40) to the right arm with a plastic or paper sling over the right shoulder. The Airfix 1:32 scale Germans would provide a good MP 38 which is easy to cut out. Make a binocular case, or cut one

from a spare figure, and fix it to the left side above the entrenching tool, again with a sling, over the right shoulder. Fit the headgear of your choice, and the figure is ready for checking and undercoating.

When painting has been completed, carefully cement the three figures, together with the gun, to a base, which may be embellished and painted according to your choice. Painting details suitable for these figures appeared in the November 1970 issue.

These are relatively simple conversions which do, however, require to be carried out with care in order to achieve a convincing result. I hope they will serve to stimulate your imaginations, and get you off to a good start for the modelling season.

Here, for those who require them, are the names and addresses of the membership secretaries of societies in the UK:

British Model Soldier Society,
Miss S. A. Watkins,
7 Howitt Road,
London, NW3.

International Plastic Modeller's Society,
Gordon J. Griffiths,
180/5 Cockhill Lane,
Rugby,
Birmingham.

Miniature Armoured Fighting Vehicle Association,
G. E. Williams,
15 Berwick Avenue,
Heaton Mersey,
Stockport,
Cheshire,
SK4 3AA.

Note the facial expression and the careful shading in this view. Base uses lichen and imitation grass to good effect.



Fig 1 Join upper torso of German to American legs



Fig 2 Trim German LMG arm as above



Fig 3



Fig 4 Schmeisser MP 38 or MP 40 drawn to 1:32 scale

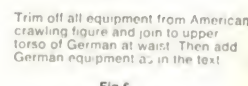


Fig 5 Trim off all equipment from American crawling figure and join to upper torso of German at waist. Then add German equipment as in the text



Fig 6 MG 34 drawn to 1:32 scale

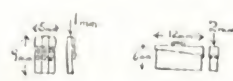


Fig 7 Schmeisser pouches and MG ammunition box with dimensions marked for 1:32 (54mm) scale

AUSTIN ARMOURED CAR

World War I vehicle in 1:32 scale from a Dennis fire engine

by D. J. McHenry

AT midday on August 8 1918, the 17th Tank (Armoured Car) Battalion, Tank Corps, went into action to exploit the amazing success of the Australian attack on the German salient threatening Amiens. Special RAF Squadrons attached to the Tank Brigades piloted the cars to enemy positions and then covered them with defensive smoke-screens against German Field Artillery, meanwhile seeking out fresh targets of opportunity.

At Framerville, nine miles from the start-line at Villers-Bretonneux, a German Corps Commander was chased off in the ensuing battle, losing his Staff Officers, his lunch, and two trains of reinforcements.

Two Austins set off into the conflict down the road to Peronne. One had a wheel shot off by a lone field gun, and the other was also disabled. The crews, in their enforced role as advanced infantry, captured a batch of Germans who were press-ganged into towing one of the disabled Austins back to the new British line. In all, the front was advanced 12 miles in a few hours; an unheard of feat at a time when gains were measured in yards.

The Austin Armoured Cars were based on the Austin lorry chassis and were originally built to the order of the Imperial Russian Government, apparently



because the Russian aristocracy held the Austin car in the highest regard. Cars destined for Russia were retained for use by the British Army when the Bolshevik Revolution broke out in 1917. The 17th Tank (Armoured Car) Battalion, Tank Corps was formed on April 18 1918, with 16 Austins originally detailed for Eastern Service. The cars were transported by rail from Cardiff docks to Bulford Barracks, Salisbury Plain, where armourers exchanged the Vickers guns for the Hotchkiss .303 machine gun favoured by the Tank Corps, and tested the new weapons on Milston Down Ranges. Ten days later the Battalion was in France.

The chassis and wheels of the Airfix Dennis Fire Engine kit are all the parts used in this conversion. The bonnet, cab, and twin turrets are all scratch-built from plastic card.

The chassis and wheels

The Austin chassis had a longer wheel base and wider track than the Dennis, so the first thing that must be done is the alteration of parts 16 and 17—the chassis frames. The vertical hanging running board supports are removed, the top of the frames filed flat and the rear angled ends cut off. To lengthen the frame, add an 8 mm length made from a cross piece

off part 117, to the end. Part 8 and associated parts can now be positioned. The top of the engine and radiator, etc, are all omitted.

The rear road springs, parts 18 and 19, are moved 21 mm down along the chassis, the curved brackets now resting on the extension. New locating holes are drilled for the front part of the springs. The final drive, part 43, is extended with a suitable length of tubing. The front springs can be positioned and both the front and rear axles added. The track width is shown in the diagram and is achieved with spacers such as parts 123 and 124.

For the rear wheels, the brake drums are cemented 6 mm further out on to the axle itself—this must be left for as long as possible to harden. The rear hub caps are the originals, but the outer 2.5 mm is removed. The same applies to the front hub caps—the drawing gives the exact size.

What you have now is a basic chassis to Austin lorry dimensions.

The bonnet and front mudguards

The scale drawings give all the dimensions needed. Begin with a floor piece to support the body work; figure 3 shows this. The flap on the front armour can be left in an open position or closed. The twin handles are made from fuse wire.

The mudguards are from the kit, but are widened according to the drawings. Before the guards are cemented the lower armour is attached, but it must be remembered that the front part is angled the same as the bonnet.

The cab

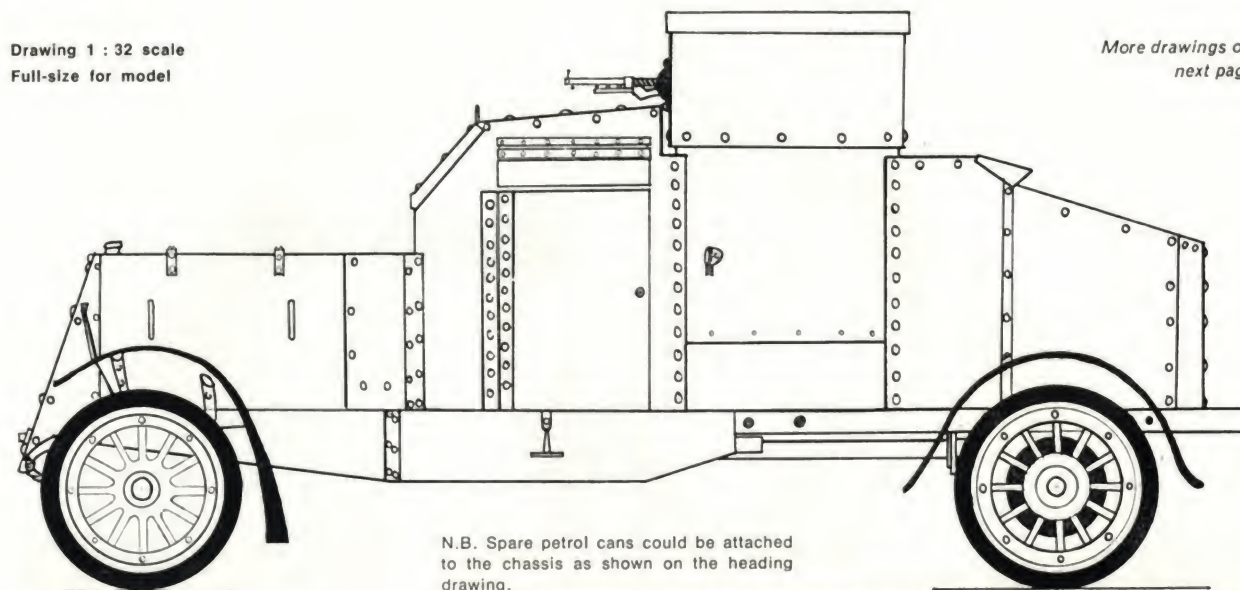
Again, follow the dimensions given, building the sides first. The door is a sheet of card, placed on top of the basic sheet. The ventilation flap above the door

Above: The heading illustration, drawn by the author, gives a dramatic impression of conditions on the Western Front. **Left:** The model showing weathered finish and open access hatches. Note the pick stowed on the bonnet side.

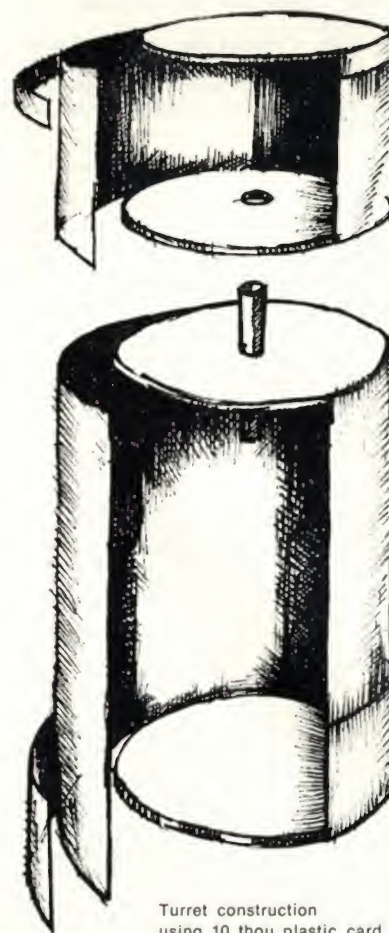
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Drawing 1 : 32 scale
Full-size for model

More drawings on
next page



N.B. Spare petrol cans could be attached to the chassis as shown on the heading drawing.



Turret construction
using 10 thou plastic card



can be left in an open position providing that a hole is cut in the original place.

The cab visor may also be open or closed. The roof-flap opens to approximately 20°. The front cab visor rests on an open bonnet flap 7 mm high. Cab steps are from stretched sprue and a suitable piece of square card.

The twin turrets

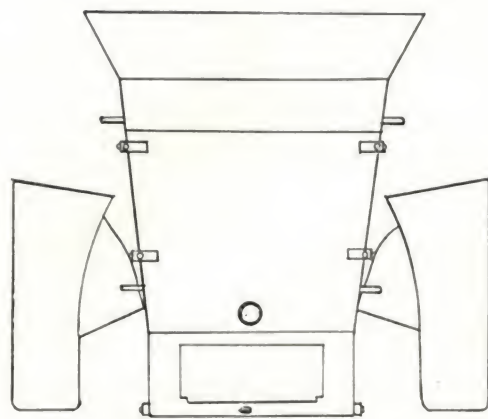
This is made as shown at left. Make a floor for both turrets, resting on the chassis, flush up behind the cab. The turrets are pivoted with a length of Biro-tube. The ball mountings for the Hotchkiss machine guns are made from parts 73 and 74, filed down, with a vertical slit. The guns are built from the end of part 127 with an additional piece of sprue

on the end for the barrel. The lower part is a long squared piece of sprue. Side visors are made according to the diagrams. Hatchways are made from 6 mm squares, placed on the outside rim of the turrets.

Rear body work

By following the side view drawing, one can construct this section with very little difficulty. The choice of having the rear view visor in an open or closed position is yours. The mudguards are from the original kit, but have approximately 5 mm removed from the running board end. As in the case of the front mudguards, personal judgment will tell in

Continued on next page

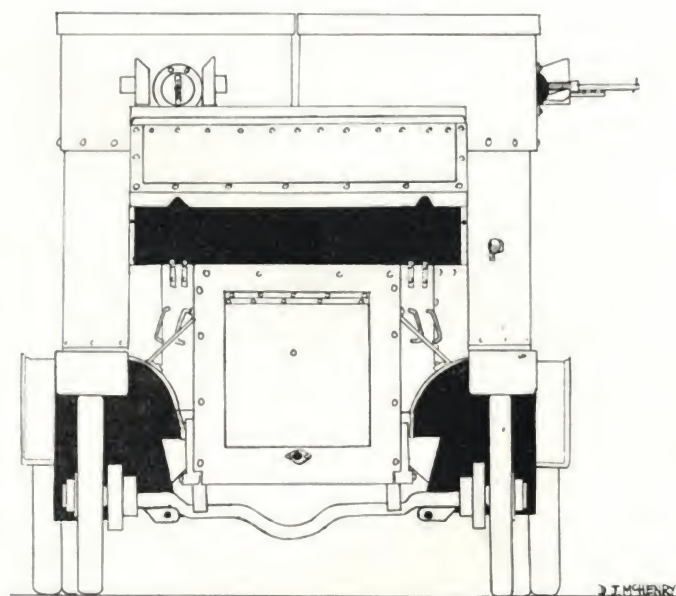


the exact 'sit' above the wheels. The width of the guards is increased to 11 mm with the addition of thin plastic card.

Colour schemes

A basic overall khaki-green was the standard factory finish, but wear and weather soon faded this. New panel repairs would obviously differ in colour to the original, and as such, lend much scope to the modeller. Camouflage patches of dark blue, black and olive green were in common use in August 1918 on all armoured vehicles with a typical Tank Corps white/red/white flash on both sides of the bonnet. In 1:32

Drawings
1:32 scale.
Plan and front
elevation



scale this would be 9 mm by 7 mm.

As you can see, my model is 'well-worn' and such an effect can easily be achieved with varying tones of Humbrol matt dark earth with streaks of off-white mingled in. The result is typical of dried clay. I prefer to paint the tyres matt light grey as suggested by the numerous photo-

graphs that I have seen. The Hotchkiss machine guns and ball mountings are matt black.

Finally, I should like to acknowledge my thanks to the Curator of Bovington Tank Museum for much helpful data and information in the preparation of this article.

dealing with large and small civil aircraft types respectively. This volume, completely updated, contains details of all the commercial transports to be seen operating in Great Britain, as well as the larger business types with eight or more seats. The commercial transports are set out one to a page, with a drawing, photo, and full specification and history. The business and utility aircraft are covered two to a page, with specification, photo and history. This book will make a useful quick reference guide for aircraft spotters who like to know what they are watching.

Aircam Aviation Series, Nos 21 and S5, Kawasaki Ki 61/Ki 100 Hien; Czechoslovakian Air Force 1918-1970.

Osprey Publications Ltd, 707 Oxford Road, Reading, Berks.
£1.10 each.

THE first of these two latest Aircam books gives specifications, development history, operational service, and marking details for both the radial and in-line engined versions of this important and attractive Japanese fighter. The colour details are particularly impressive, giving a very diverse range of schemes which should suit all tastes and levels of modelling skill. The photos show detailed close-ups, flying views and operational scenes which should appeal to historians and modellers alike. Forty-eight aircraft are shown, side view only in colour, and 16 tone drawings show the different upper

Continued on page 33
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Fallschirmjäger

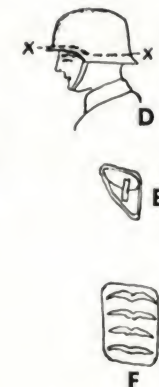


By Robert C. Gibson

IN 1936, the first parachute units were formed by the Luftwaffe and the Army, the former being designated Fallschirmjäger-Regiment 1 — Parachute Rifle Regiment 1: an appropriate designation for a force which, like the rifle corps of the Napoleonic wars, demanded a high degree of personal initiative coupled with an ability to carry everything and move fast. By mid-1939, a second Regiment had been formed, and the Army paratroops incorporated into the Luftwaffe as II Battalion of Fallschirmjäger-Regiment 1. Further additions were Artillery Battery 7, Air Communications Company 7, Medical Company 7, and a host of smaller units, all within 7th Air Division (Parachute) of the Luftwaffe.

No parachute operations were mounted against Poland in 1939, and during the stalemate which followed, plans were laid for the use of both parachute and glider-borne units for the campaigns of 1940.

In April 1940, I/Fallschirmjäger-Regiment 1 was parachuted into Denmark and Norway to seize bridges and airfields. A month later, simultaneous operations were mounted against Belgium and the Netherlands. The Belgian Fort Eben Emael was taken by a picked force of parachute riflemen and engineers in DFS 230 gliders. The Netherlands were



- A: Luftwaffe eagle badge.
- B: Parachutist wearing smock.
- C: Officer wearing waterproof suit.
- D: Method of cutting down helmet.
- E: Pistol holster.
- F: Typical collar patch (Hauptfeldleiter).

invaded at several points by glider-borne infantry and parachute troops — the former being Army troops of the 22nd Air Landing Division; the latter being picked detachments of Fallschirmjäger Regiment 1, who seized a number of strategic points, including Waalhaven airfield where the 16th (Army) Infantry Regiment were landed by Junkers 52 to seize the Rotterdam bridges until relieved by advancing ground troops.

Combat Uniforms and Equipment—1940

The basic uniform was a blue-grey short open-necked tunic and trousers tucked into laced ankle boots. Rank was indicated by a number of white 'eagles' on the golden-yellow collar tabs (up to four between corporal and sergeant-major; privates had none); officers had silver 'eagles' and an oakleaf wreath surrounding them.

Over this was worn a rush-green smock open at the neck and extending down to the knees. The swooping eagle of the Luftwaffe (see diagram) was worn in silver-grey thread on the right breast. Pale grey 'eagles' of rank were sewn on patches on each upper arm, the officer's wreath being replaced by a bar under the 'eagles'. Another garment worn in place of the smock is the full-length waterproof suit shown in the diagram; badges of rank and eagle were as for the smock—

Below: Front and rear views of Airfix 54 mm German Infantry figures converted to Fallschirmjäger in the manner described on page 48. This effective transformation depends largely on the use of Plasticine. Paint over with Unibond (after 'curing' the Plasticine) before final painting.



Paratroops in a Junkers 52 troop carrier in 1940; all wear smocks and have the Luftwaffe eagle and national shield insignia transfers on the respective sides of the helmet.

it appears to have been used principally by officers, and must have been rather uncomfortable to walk in.

The black ankle boots had lacing offset to the right side and natural-colour rubber soles. The black leather belt and webbing were bare of pouches during the jump, the only weapons carried were an automatic pistol in a black leather holster at left front, and a fighting knife (of the 'Holbein' style favoured by the Nazi party organisations) with black hilt and steel blade, worn in the belt or boot tops

Continued on page 48

AVIATION

The Birth of the Luftwaffe.

H. Schliephake.
Ian Allan Ltd, Terminal House, Shepperton, Middlesex.
£3.00.

THIS is an interesting book which admirably lives up to its title by giving a fairly complete picture of the development of the Luftwaffe in the years between the two World Wars. The first 80 pages are occupied with text, which gives a lot of useful factual information while at the same time adhering to the chronological sequence of events. There is much interesting reading here, notably the detailed accounts of the operations at Lipetsk, the Luftwaffe's large secret training base in the USSR where so much of the development of Germany's air force, its equipment and its men, took

place. Nine appendices provide useful facts on aircraft markings and designations, as well as organisation and rank details. The second part of the book, longer than the first, gives splendid pictorial coverage to the early equipment and activities of the Luftwaffe, including operations in the Spanish Civil War, up to the day when World War 2 began. We felt that some of the captions were slightly inadequate, but this is only a small irritating criticism, and as a whole the book is of a very high standard.

Civil Airliner Recognition.

John W. R. Taylor.
Ian Allan Ltd, Terminal House, Shepperton, Middlesex.
26p.

THIS book follows the pattern set last year when *Civil Aircraft Recognition* was replaced by two separate books,



JAGDPANZER IV

Conversion from the new
Airfix Pz Kpfw IV kit

By T. J. Gander



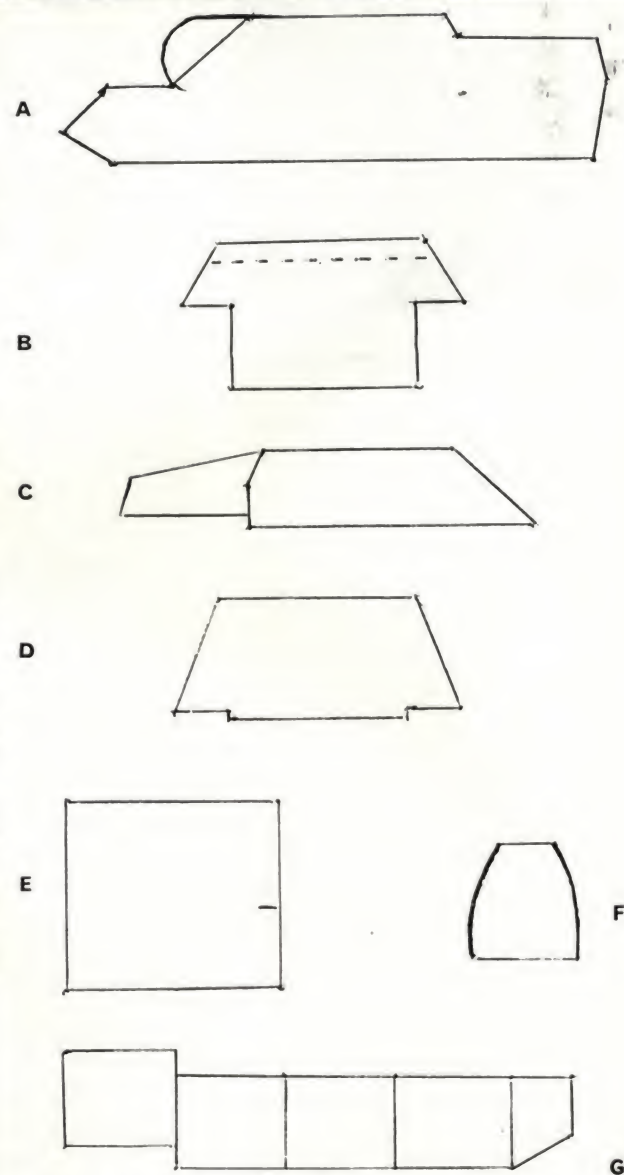
TOWARDS the end of 1943 the anti-tank battalions of the Wehrmacht and SS began to be re-equipped with a low, well-armoured self-propelled gun mounted on a modified Panzer IV chassis. This was the Jagdpanzer IV Sd Kfz 162, sometimes known as the Panzerjäger 39. Armed with the 7.5 cm PaK 39 L/48 gun, it relied on its low silhouette and sloping armour for protection when hunting Allied AFVs and it was so successful that over 1,500 of various marks were built. Later in the war the 7.5 cm StuK 42 L/70 was fitted to the same chassis, which then became the Sd Kfz 162/1, but this gun, similar to the Panther's main armament, made the vehicle excessively nose-heavy and steel tyred running wheels had to be fitted.

This article describes how to model the L/48 gun version, but details of how to fashion an early L/70 version are included. The Panzer IV kit forms the basis, but various bits from the spares box are needed as well as the usual supply of plastic card and Mek-pak.

First step is to assemble the hull bottom (part 81), sides (9-38), rear (82) and track covers and hull front (79). Note that the wheels are not fitted at this stage as the hull will need to be extensively handled. Take the hull top (78) and with a fine saw cut the part from side to side some 20 mm from the back. File down any of the turret ring armour ridge remaining on the rear half and cement this into its normal position. Also, file off the tool detail from the track tops. Then cut the fighting compartment front, sides, roof and rear from plastic card and cement them together. The general layout drawing shows the arrangement, but note the side and front angles shown in the sectioned drawings. A hint is to fit the roof on to strips of plastic cemented inside the hull sides just below the top joints. This makes a stronger joint as there is more contact area. I use this method extensively on joints and the result makes the model more robust.

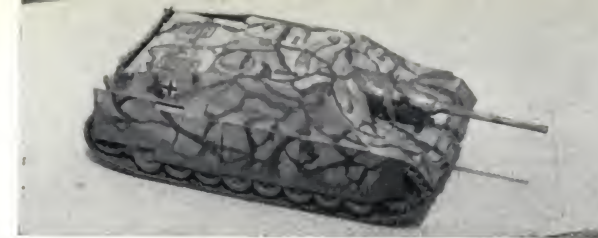
Next comes the most awkward bit. This, as usual, is the gun mantlet and mounting. First, cut out the mount backing plate (see drawing) from thin card and cement it on to the sloping front narrowest straight edge uppermost, with its top edge centre opposite the mark on the hull top drawing. Note that this is not on the centre line, but 2-3 mm from it. The bulbous gun mounting must then be made from any material handy to you. I used a section cut from an old plastic screwdriver handle but there are numerous alternatives and the part could be fashioned from balsa, hardwood or even made up from well-hardened plastic.

Top of page: Standard Jagdpanzer IV with L/48 gun painted in criss-cross pattern, probably red-brown with green and yellow spray patches over basic sand-yellow. **Below:** An interesting variation mounted on experimental mantlet, flatter than the standard type. Note muzzle brake on L/48 gun.



Key to drawings above and right: (A) 1:76 full size section. (B) 1:76 full size cross-section. (C) Fighting compartment sides and rear (2). (D) Sloping front of fighting compartment. (E) Roof—line shows gun centre line. (F) Mounting plate. (G) Scheutzen (2) (H) Non-scale sketch of StuG III mantlet. Cut along dotted line. (I) Non-scale sketch of mounting. (J) L/70 gun clamp. Use thin rod to simulate the hinge at top of sloping hull front.

AIRFIX magazine

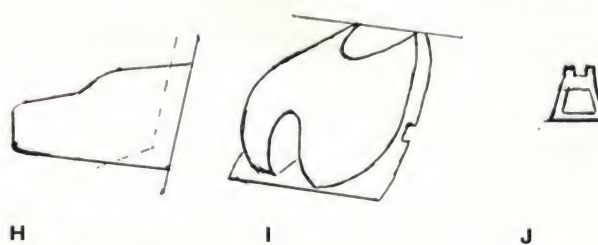


putty—the choice is yours. Use the sectioned drawing as a guide for shape and angle. Before fitting, file a 2 mm groove from the bottom to the centre—again, refer to the drawing. The mantlet comes from the Sturmgeschütz III kit and must be adapted by cutting as shown in the sketch. The gun can also come from the StuG III kit but I feel this looks too thin so I used a slightly wider barrel from the spares box. Whatever you use, 23 mm of barrel should protrude beyond the mantlet when all is cemented in place. The muzzle brake was not fitted on many vehicles but some did retain one. Using the side section as a guide, cut one 5 mm x 24 mm rectangle and one 10 mm x 24 mm rectangle from card and, using the smaller piece on top, form a new wedge-shaped hull front. Fill the sides flush with plastic putty. When the new plates are fully set, file off the underside flush with the hull bottom. Complete the armour by cutting out and cementing on the rear hull plates and use plastic putty again if necessary to form a smooth joint. Note the side rear armour does not reach down to the track cover top. Leave a gap of about 1 mm. The wheels can now be fitted as normal.

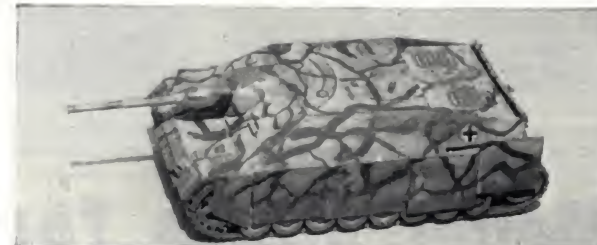
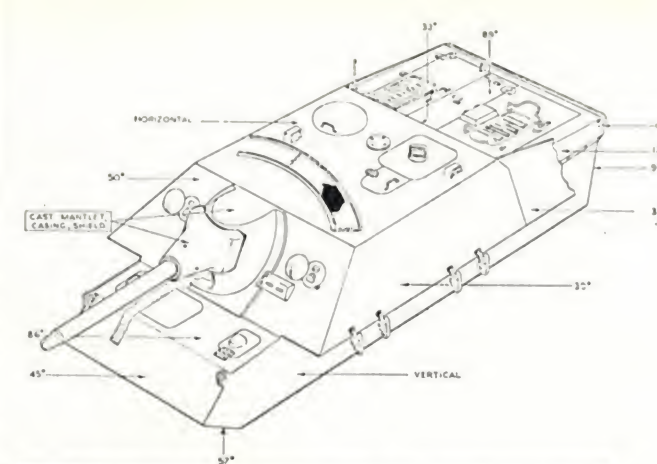
The main construction work is now completed and detail work can begin. As always, how far you go on this is up to you. The main hull top hatches are mainly made up from scrap card but the circular hatch cover came from the Airfix JS3 kit. Most vehicles carried 'scheutzen' side plates. They were light steel plates loosely fitted for protection against hollow-charge head missiles and were easily knocked off so they are optional. If you wish to fit them, cut them out from thin card as shown in the diagram and then cut and cement them as individual plates for extra realism. The tops of the plates should be flush with the track top height—note, however, the rear plate is higher. Extra armour can be simulated by adding the spare track (part 89) from the Panzer IV kit on to the sloping hull front. The driver's visor also comes from the Panzer IV kit but add a sliver of plastic to the centre to divide the visor into two. Add the fuel tank (86-87) and its mounts and part 83. The spare track on the hull rear is made from spare StuG III track links with a Microstrip 'rack' to hold them in place. However, a suitable length of Panzer IV track may be used, especially if 'scheutzen' are fitted when the resultant gap in one track can be hidden. The gunner's vision port covers are 3 mm wide circular cones filed to a point. These can be made by turning spruce held in a wheel brace against sandpaper or file. When a suitable point is formed, cut the cone off.

The L/70 version is in all respects similar except that the gun protrudes 47 mm from the mantlet. Early L/70 versions retained the rubber-tyred wheels but these could not stand up to the extra weight of the larger gun so a liberal supply of spare wheels was carried on the hull rear top (as on the StuG III). A travelling clamp for the gun was fitted to the sloping hull front (see sketch). Omit the vision port cover on the driver's visor side.

With so many Jagdpanzer IVs in service, there are many colour schemes to choose from. My model is finished sand with olive green 'stripes'. The mud is Humbrol dark earth, or, of course, real mud, and the whole model was afterwards lightly brushed with a stipple brush loaded with almost dry gunmetal and then dark earth. This gives a worn and dusty appearance.



September 1971



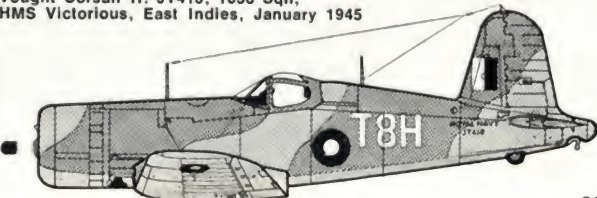
Top: A useful sketch from 1944 Allied Intelligence reports shows the hatch and vision device detail to perfection. Note brackets for suspending skirt armour. Armour angles are given by the small figures. **Above and left top:** The three pictures show various aspects of the completed model.

Corsair—from page 12

and before going into action in the Solomons were repainted in the home country, using locally manufactured paints. The result was that the normal two tone Sea Blue/Intermediate Blue scheme with off-white undersides tended to merge and an overall colour of a muddy greenish grey appeared. Add to this oil stains and operational patching and repainting and the NZ Corsairs took on a colour all of their own. Pacific island sun bleached what colour was left and therefore any modeller who painted a RNZAF Corsair in a mixture of greys could hardly be criticised.

National insignia on Corsairs also varied considerably. From the simple blue circle with white centre through a 'C' type roundel on Corsair 1s in the FAA to the more complicated blue roundel with white bars for the Pacific area there were many variants. The RNZAF used a light blue roundel with white bars outlined in dark blue. A yellow outer circle went round the roundel itself. As variants of the standard schemes were always being made to suit local conditions, it is best to use photographic evidence to work from when making a conversion of the Corsair kit.

Vought Corsair II, JT410, 1836 Sqn, HMS Victorious, East Indies, January 1945



23

AS most of us have only a limited amount of space for a model railway layout we must use this to the greatest possible advantage. Thus it is all to the good if we can provide scenic structures which will not only add interest to the model but which will also increase its operational possibilities. A very suitable feature for a model railway is a mine. This can be as small and simple or as large and complex as you wish and as space will allow. In addition to running trains of empty wagons to the mine and of full ones away from it, you will need machinery and other equipment, explosives, wooden props, etc., delivered, by train, of course, from time to time. You can even run passenger trains, for the miners, perhaps using old and rather decrepit coaches.

The photographs accompanying this article show a variety of model and prototype mining structures and it is hoped that they will give you some ideas for



Model mines for railway layouts

Some suggestions in words and pictures by Michael Andress

your own layout. Specific modelling details for one of the structures shown will appear in a later issue.

(1): This small mine has a narrow gauge system with small tip wagons in which the ore is brought, by horse and man power, to a wooden chute where it is loaded into standard gauge wagons. The whole scene occupies a space of only just over a square foot and would fit into an otherwise unused corner of a layout. Details of construction of the loading chute and the rest of the scene will be given in the next article in this series.

(2): This wooden hopper is used to store gravel dug out of a nearby pit. The gravel is then transferred by conveyor belt to lorries; in model form a railway siding could take the place of the lorry loading area. This structure was photographed



near Stockholm, Sweden, but similar buildings are also used in many other countries. Model construction is most effectively carried out using pre-painted or prestained strip and sheet wood. Note the power supply, the planks stored beneath the main part of the structure, and the ladder; small details such as these will add to the finished appearance of your model.

(3): This OO scale model gold mine was built up from balsa to a design by an American modeller, Earl Cochrane. This interesting structure only requires a very small space.

(4): A large mine building, now derelict, in Wales. Slater's corrugated 'iron' is ideal for covering the walls of this type of structure. If you haven't room for a complete three-dimensional building, it could be modelled in low relief.



(5): This impressive coal mine in N scale was built from the Pola plastic kit. It is also available in OO scale. Although it appears to be a large and complex structure, the space needed for this model is not great, and use of it would greatly add to the scope and interest of operating the stock on any layout.

AIRFIX magazine



SIKORSKY S-61N

Sea King airliner variant

by Alan C. M. Laird

THE Sikorsky S-61N was eventually chosen by BEA following the failure of the Westland Westminster to meet their requirements. The first machine was shipped from the manufacturer to Southampton, assembled, and flown to Gatwick on January 28, 1964, still carrying its American registration, N4604G immediately under the floor level window on either side of the nose, otherwise in standard 1964 BEA livery. At this time it was still fitted with the small sponsons standard on the Sea King. On arrival at Gatwick, British VHF equipment was fitted and the helicopter reappeared as G-ASNL.

The second S-61N, G-ASNM, was landed at Southampton on February 21 and flew to Gatwick three days later where it went on a pilot training programme before modification to British standards. Both these aircraft flew in Schreiner/BEA colours as PH-SBH and 'SBC respectively in 1968-69 but they were later returned to BEA.

The next two aircraft, G-ATBJ and 'TFM, were originally delivered to International Helicopters Limited, a joint subsidiary of BEA Helicopters and Okinaga Airways. Okinaga later withdrew and the aircraft were completely taken over by BEA. G-ATBJ landed at Southampton and flew to Gatwick for modification on April 8, 1965. G-ATFM probably became the first civil helicopter to fly the Atlantic when on delivery it flew from Canada via Newfoundland, Greenland, Iceland, and the Faroes, arriving at Prestwick on May 28, fifteen days later, after 34 hours 40 minutes flying time.

The fifth and most recent aircraft, originally owned by Pakistan International Airways as AP-AOB, was shipped to England and first flew as G-AWFX on September 5, 1968. This was the first of the BEA fleet to be finished in the new dark blue livery.

The Conversion

Converting the Airfix Sea King to a civil S-61N is not a project recommended for the beginner; indeed, very few of the parts are left unmodified in one way or another. By using laminated card on the tail, card for the fuselage lengthening, and moulding the sponsons, I have kept my model entirely free of balsa wood; however, the modeller should choose his own materials.

First, Sellotape the fuselage halves together and remove the section of fuselage between the intakes and the rear of the

The first of BEA's S-61Ns, seen in 1964 shortly after being fitted with British equipment. Note the inverted Union Jack flag painted on the nose. Model of this machine is shown on page 32 (BEA).

cockpit canopy. This done, the halves can be separated. The thought of cutting out 19 identical or near-identical windows was too much for me, so I used the following method. It may seem a bit drastic, but it works. Cut away the strip of plastic from the fuselage sides which will coincide with the window positions, as shown in the photograph. Cut a length of perspex to fit this space, and on to this glue pieces of 10 and 20 thou card to blank out the parts between the windows, trim them to the correct height when dry, and glue the assembly into the fuselage. Allow the card to overhang slightly on the outer side, this will be filed off when removing the joint lines. Now glue pieces of card to the back of the framing and also glue them above and below the level of the windows, this will help to hold the rather insecure perspex in position and makes up the scale thickness of the cabin walls. On the port side this can be done in a single strip of nine windows, while on the starboard side it should be done in a strip of three rear windows separated from the next four windows by a piece of thick card filling the space of the large door in the kit.

From 40 thou plastic card, cut pieces $\frac{1}{4}$ inch wide for lengthening the fuselage. Sides are bent to match the contours of the fuselage and bulkheads are used to hold them in place. Windows



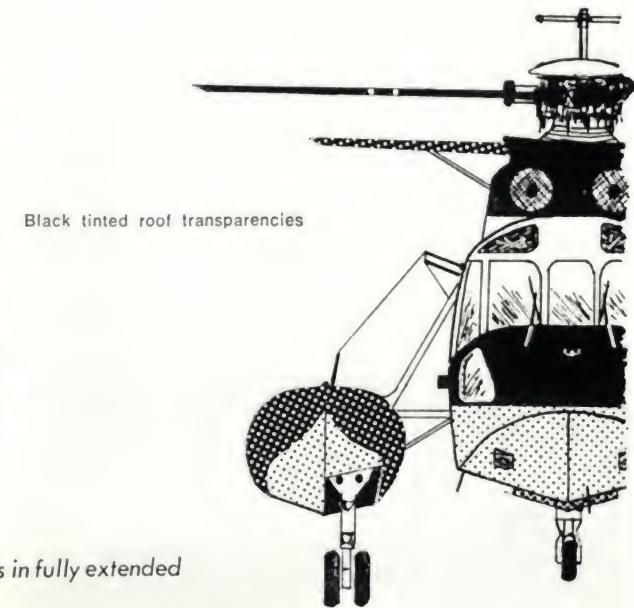
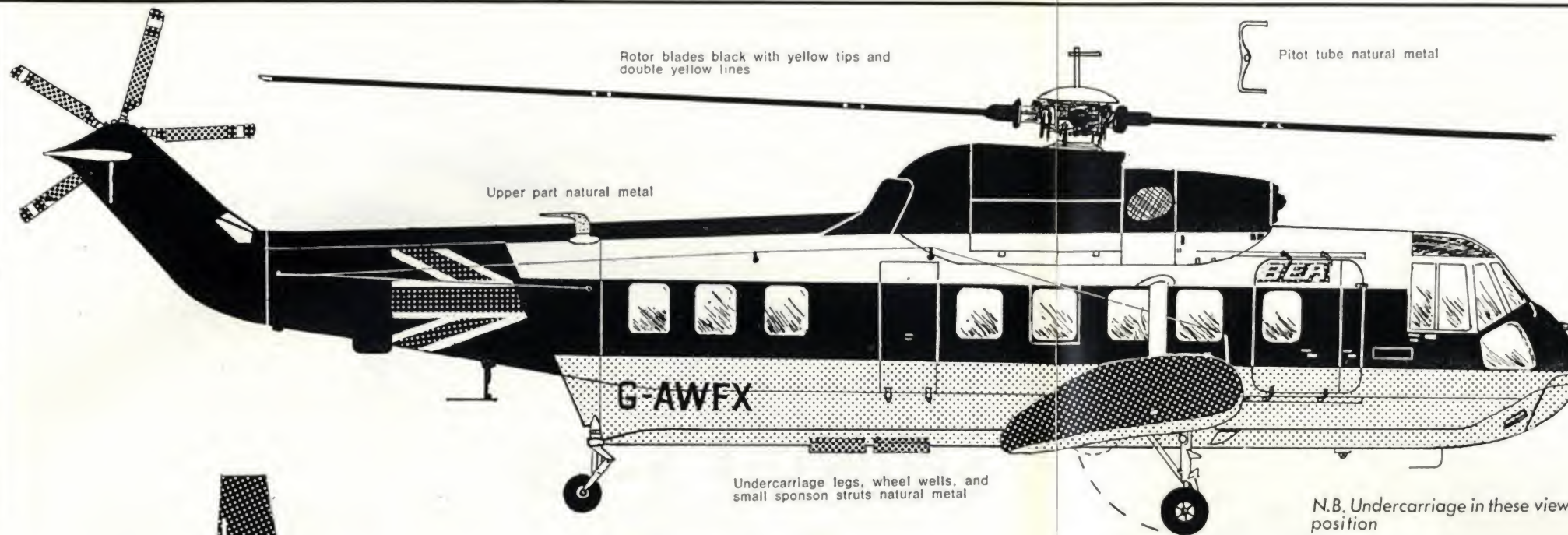
The first of BEA's helicopter fleet to be finished in their new dark blue colours was G-AWFX, which is the most recent aircraft to join BEA's fleet of five S-61Ns (BEA).

are cut first and work should be done in two halves, following the joins in the kit. These parts are joined to the main fuselage halves and the nose halves attached to this. Sellotape the fuselage half assemblies together, along with the canopy, and ensure that the new parts dry correctly, leaving for at least 24 hours.

Using the cabin floor (suitably lengthened) supplied with the kit, manufacture any interior detailing required. For the cockpit, the kit parts can be used, though with shortened control columns.

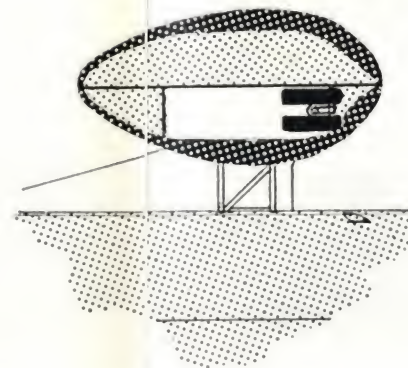
When the fuselage is dry, glue the halves together, incorporating any interior detailing, and allow to dry. Also glue on the intakes/front cowlings.

Text continues on page 32, after drawings



Article continues on the other side of the advertising section; unstaple centre pages to work from drawing.

N.B. Undercarriage in these views is in fully extended position



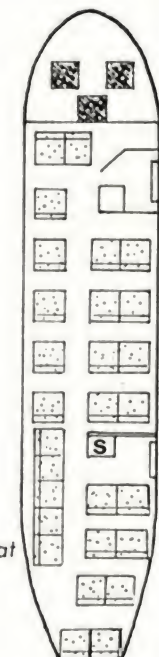
BEA SIKORSKY S-61N

DRAWINGS BY ALAN C. M. LAIRD



SEATING LAYOUT

- CREW SEATS
- PASS. SEATS
- S STEWARD
- t TOILET



Heller

Heller's 1/72nd Musée (Museum) series is one of the classic ranges of aircraft kits in the plastic model field. It concentrates mainly on French manufactured planes built between the Wars and many of those used in World War II. The Musée series has been widely acclaimed by international critics including "Flying Review", "Air Modèles", "Scale Models", "I.P.M.S." etc., and because of the interest surrounding these kits by enthusiasts and collectors, they continuously stimulate new reviews and comment in hobby magazines the world over.



1/72nd Musée series Bloch 152, 24p.

The fighters of the Musée series at 24p are particularly fine value. In addition to the two shown on this page, there are four others available now, the Caudron C714, Dewoitine 520, Morane 406 and Les Mureaux 117. Two new models are due in the next months, the Morane 225 and 230. Incidentally the whole range is beautifully illustrated in the Riko Heller catalogue, available at 10p from all good Hobby Shops and from RIKO, 13/15A, High Street, Hemel Hempstead, Herts.



The only American built Fighter in the 1/72nd Musée range, the Curtiss H75A. 24p.

Of even more interest to all modellers are Heller's outstanding 1/72nd Musée series of French Bombers. Each one a collector's gem and a joy to every builder. The range includes such unique models as the Bloch 210, Loire 45 and the Leo 451. Be among the world's great aircraft connoisseurs and build a collection of these rare models.

The 1/72nd scale Amiot 143, used as a night bomber in 1939. 90p.



1/50th scale Vautour 11B twin engined Bomber of the French Air Force. 90p. Often the exceptional Musée series clouds the fact that Heller make a very fine, comprehensive range of modern aircraft. The jets shown on this page give ample evidence. Here again Heller produces unique models made by no other kit manufacturer. The whole range of these models is laid out fully in colour in the Heller catalogue.



Heller's 1/50th scale "Brequet Alize" three-seater carrier fighter. £1.20.

All the jets shown in this column are 1/50th scale and French built since the War. The French aircraft industry has steadily surmounted the constant crises of the last 20 years that have so dogged the British aircraft industry. Many highly successful aircraft have been sold to many parts of the world, most notably the Mirage series made by the outstanding Dassault Company. Heller make three models of these in 1/50th scale, the Mirage IIIR (for reconnaissance) the Mirage IIIC and the Mirage IV (Mach 2 attack bomber).



The rocket-assisted "Trident", holder of the altitude record—in 1/50th scale, 80p. Britain's connection with France in the aviation field is also represented by Heller with three versions of the Jaguar in 1/50th scale and the Concorde in 1/100th scale



One of Heller's three 1/50th scale models of the Jaguar—the Jaguar M, for carrier-borne operations. £1.20.

In addition Heller make helicopters, military transports and civil airliners; in fact an aircraft range of which they are justly proud.

RIKO
regd.



Heller, unique amongst manufacturers in the production of Historic War and Merchant Ships. The "Brigantine", a superb sailing ship, modelled in 1/100th scale with the aid of the original documents. Aft there is passenger accommodation for ten. £3.87.



The "Occident" by Heller in 1/100th scale. A beautiful model, typical of the early steamships with auxiliary sail of the 19th century. £3.87. Below, the "Amphitrite", a magnificent three masted ship which is now a Training School, anchored at Port-Grimaud. In 1/100th scale. £1.55.



Heller's "Corona", in 1/200th scale. This superb three master (one of the best of Heller's "Galleon Series") is noted for its eight look-out towers. This ship dates from about the 16th Century. £2.12. "La Fauvette", in 1/100th scale, a steam yacht with steadying sails, typical of the 1900 era. £1.55.



Below: "Le Galion", Heller's outstanding reproduction of a 16th century Spanish Galleon. £2.12. For other unique Historic Ships in the Heller range write for the RIKO Heller Catalogue, price 10p to RIKO, 13/15A High Street, Hemel Hempstead, Herts. Prices on these pages are suggested selling prices only.



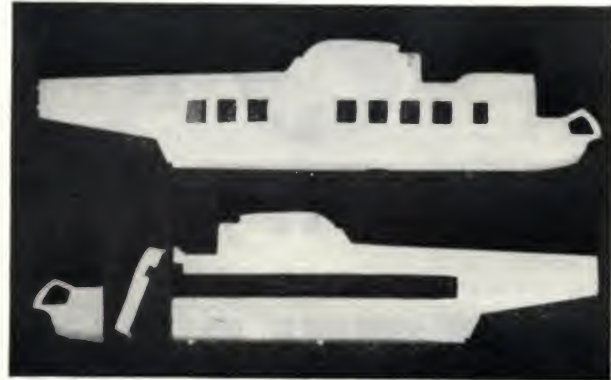
RIKO
regd.

27

Sikorsky S-61N—continued

Now the difficult part! The above operations leave the model extremely scarred and a fair amount of plastic surgery has to be done on the join lines to render them invisible. My method is simply to run glue into the joints, give it ample time to dry, file and sand down until smooth. At the same time, all unwanted details can be removed or filled, which involves just about everything. Check with the drawings, which show that the work includes removing door rails, sponson mounts, radome under nose, and filling the sonar hole. Re-shape the exhaust outlets to oval shape by adding body putty at the top of the outlet.

The canopy is inaccurate for all Sea Kings/S-61Ns as it bulges too much at the sides. To remedy this, I cut away the sides, leaving only the roof and the single panel at the very front. The



Two views of the model under construction showing (lower view) the fuselage cut, and (upper view) the fuselage lengthened and with windows inserted. **Opposite, right:** Completed model.

sides were then built up pane by pane with perspex bent to the correct shape, though a complete new canopy could be moulded in one piece if desired.

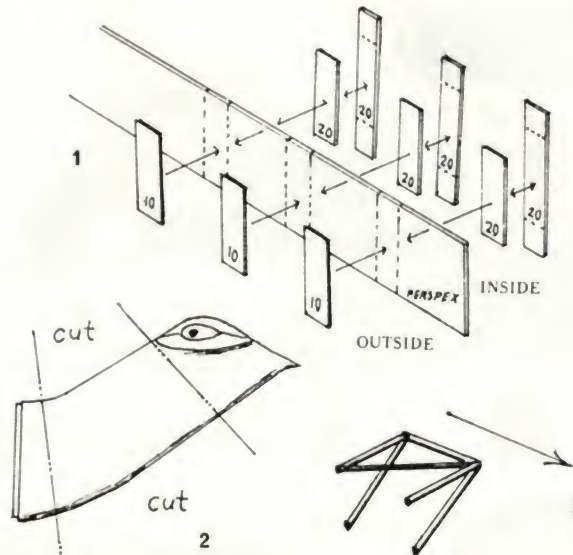
Join the tail halves and cut out the section shown. Make a new centre part from laminated card, leaving a space for the spotlight housing. Glue the parts and attach them to the fuselage. The tail rotor is assembled as per kit instructions. A horizontal stabiliser is made from laminated card filed to taper and aerofoil shape. Strut is from stretched spruce.

A coat of clear varnish applied at this stage will cover any slight roughness left by sanding. After this has dried, scribe the doors and hatches, add the door rails, hinges and recessed handles. The boxes under the fuselage containing the extra British equipment are made from 40 thou card. Painting is best done now while the fuselage can be masked without obstruction, leaving only detail painting until the conversion is complete.

The undercarriage legs supplied in the kit are in the compressed position, so if the undercarriage is required to be retracted, then the legs will have to be lengthened, demanding almost completely new parts, as shown in the upper views in the drawings.

The new sponsons can be made from balsa; however, I decided to mould them: the rather bloated shape lends itself well to this technique and one mould can be used for both sponsons. These are moulded in plastic card in the usual way. The large aerofoil-shaped strut is made from 20 thou plastic card, while the arrangement of smaller struts is from stretched sprue or Slaters Plastic Rod.

Assemble the rotors and rotor head as per instructions, though some added detail would be an improvement. The pitot tube on top of the head is tricky since, of course, it does not rotate with the rotors. Drive a length of hot wire down through the axis, if possible in one stroke, to make a hole from which the pitot tube will project. Anchor a piece of plastic rod somewhere inside the fuselage so that it projects out of the centre of the rotor housing. Glue on the rotor assembly. The plastic rod should be longer



Top of page: Another view of G-AWFS showing the equipment bulge just aft of the float. This is a recent modification not shown on the drawings (BEA).

Drawing (1): Construction of windows and framing. **(2):** Old tail section and cut lines for new centre. **(3):** Detail of strut arrangement on starboard sponson. Arrow shows direction of flight.

than necessary, this is cut to the correct height now. The vertical projection should be bent over to right angles of the line of flight, not right angles to the rotor head. Add pitot tube on top made from bent plastic rod. The drawings show clearly the shape of this part. Finally, add all the small details and complete the painting.

Interior

Seating layouts show 24 and 28 seat configurations, the toilet can be replaced by two passenger seats. Entry is normally by the rear door. Seats can be removed for cargo operations. Interior colour scheme is light green seats, ceiling panels blue and wall panels ivory.

Painting

Humbrol midnight blue when wet is a perfect match for the new BEA blue, but unfortunately it dries to the wrong colour, so add dark green and allow a little of it to dry to see if it is the correct colour this time. Use scarlet for the sponsons and other red parts. Airfix dove grey for the lower fuselage.

In conclusion, I would like to thank Mr A. Smith of BEA Helicopters, who helped me a great deal with the aircraft histories and colours.

AIRFIX magazine

New Books—from page 20

surface schemes. The fifth title in the Aircom Specials gives pictorial coverage plus colour and tone drawings of the progress of the Czechoslovakian air force from the end of World War I to the present day. Many unusual aircraft types are featured, and in contrast there are several well-known Western types which are available as plastic kits and would look distinctive if finished in the markings shown. These types include the Spitfire IX, Mosquito, Heinkel He 219, and Liberator GR VI.

Messerschmitt, an Aircraft Album.

Ian Allan Ltd, Terminal House, Shepperton, Middlesex. £2.25.

THIS 144-page book is the third in this series of 'aircraft albums', and is well illustrated with over 150 photographs. In the usual style of the series, the text gives a type-by-type listing of the company's products in chronological order, in this case from the Pilotus glider of 1921 to formation in 1969 of Messerschmitt-Bölkow-Blohm GmbH, currently the largest German aviation company. During the Second World War, Messerschmitt was one of the most diverse and innovative of aircraft firms, producing such widely differing types as the huge Me 323 Gigant six-engined transport to the tiny rocket-powered Me 163 Komet target defence fighter. The firm also did much to establish the superiority of the cantilever monoplane in the inter-war period, and all the examples of this type of aircraft are shown. Nearly all of the 71 types in the useful list at the end of the book are illustrated, and all are detailed with specifications and development histories. The main types are given extensive coverage while the lesser types are given less space in accordance with their importance.

Military Aircraft of the World.

John W. R. Taylor and Gordon Swanborough. Ian Allan Ltd, Terminal House, Shepperton, Middlesex. £1.50.

THIS is a splendid reference book in a popular style which gives a very complete coverage of all the aircraft at present serving with air forces all over the world. The major types are allocated one page each, and coverage consists of a photograph, a small three-view silhouette drawing, not to a common scale, specification and development and service histories. The less important types are dealt with two to a page, with a photo, history and less complete specification. The aircraft in both sections are listed in alphabetical order, and an index further eases the task of looking up particular aircraft. In addition to the main parts of the book, there are also included 12 colour photos of such diverse types as Swiss Air Force Venoms to a Tupolev Tu-16 which increases both the appeal and the value of this 242-page book.

September 1971



Soldier figures in plastic are from a new range by MDM, reviewed on page 48. **Above:** Foot Artillery band. **Right:** Light Infantry Colour Party. **Below:** Hungarian standard bearer.



Early Aviation at Farnborough, volume 1: Balloons, Kites, and Airships. Percy B. Walker. Macdonald and Co Ltd, BPC Publishing Ltd, St Giles House, 49/50 Poland Street, London W1A 2LG. £6.50.

THIS large format 284-page book gives a fascinating and detailed account of the early experimental work at one of the world's foremost aircraft development establishments. This volume concentrates on kites, balloons and airships, while a second volume, yet to be published, deals with aeroplanes. We feel that this is a sensible separation, as the subjects are so different that they might not both appeal to all readers. Well illustrated with 65 photos and eight drawings, this volume deals in great detail with the following subjects: The War in South Africa, 1899-1902; The Road to Farnborough, 1901-6; The Last Years of Colonel Templer, 1901-6; Cody and His Kites, 1861-1908; Kites in the British Army, 1901-8; Kites and the Royal Navy, 1903 and 1908; Templer's Airship *Nulli Secundus I*, 1901-7; The Flights and Adventures of *Nulli Secundus I*, 1907; *Nulli Secundus II*, 1908; Colonel Capper's Baby, 1909; Epilogue, The New Dawn, 1909-10. The narrative is combined with many technical details about the equipment and its operation, and the variety of events and experiments covered is such that the knowledge which the book gives would be of use to all interested in airships, kites and balloons in general, not only those developed at Farnborough. We look forward to seeing the second volume in this well-produced

and vastly informative pair of books, which come in an attractive slip-case featuring a reproduction of the jacket.

RAILWAYS

Railway Enthusiasts' Handbook 1971-72.

Edited by Geoffrey Body. David and Charles Ltd, South Devon House, Newton Abbot, Devon. £1.50.

NOW in its fourth year of publication, this book has become deservedly popular with everyone in any way interested in railways, whether full size or model. This year's edition includes information on Continental railways, world events, modelling organisations, preservation, industrial lines, tramways, and information on British Railways, like appointments, lines, locomotives, and centuries. Many interesting photos increase the attraction of the book, which is sure to prove an absolute 'mine' of information to all actively interested in railways.

The Chronicles of Boulton's Siding (facsimile reprint).

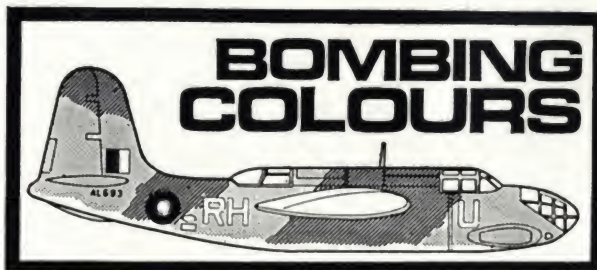
Alfred Rosling Bennett. New introduction and index by John Marshall. David and Charles Ltd, South Devon House, Newton Abbot, Devon. £3.00.

FIRST published in 1926, this book has long been a collectors' item, and so the appearance of this reprint should be welcomed by those people who have

Continued on page 49



A fine study of Lancaster VN-N:R5689 of 50 Squadron in the summer of 1942. She was destroyed in an accident following an operation on September 19 1942. Note the well-worn appearance (Rolls-Royce).



Part 29: Prelude to the Great Offensive

FROM March 1942 the bomber offensive gathered momentum as never before. By night there were the 'thousand bomber raids'. By day, Bostons with massive fighter cover flew *Circus* operations over France, tempting the Luftwaffe to battle. Between March and June 30, 700 sorties were flown by Nos 88, 107 and 226 Squadrons under the protection of about 22,000 Spitfire sorties. The response was disappointing, costing the RAF about 300 fighters and the Luftwaffe a little less than 100.

Boston IIIs were coloured Dark Green and Dark Earth with Sky under surfaces. In May 1942, Dull Red codes were introduced. There was another change too, the application of Type C1 fuselage roundels and revised fin flashes. Type A1 roundels with equi-width bands of colour in bright shades were suitable when close combat was common. Now it was decided to widen the red and blue areas of the roundels and reduce the white in the fin stripes. It might appear logical that such a major change for identity purposes would rapidly be adopted, but this was certainly not so. These roundels were seen on some aircraft in May, became common by mid-June but were still replacing the old style on operational aircraft even in July. Two variants laid down for bombers were a medium size with red-yellow diameters ranging 12-16-32-36 inches and large size diameters 18-24-48-54 inches. Twin-engined aircraft had tail flashes 24 by 24 inches band widths being 11-2-11 inches, in theory, anyway, because the

Boston III OM-D:AL754 with red codes and black serials. She operated on the Philips raid of December 1942. Traces of the old Type A1 fuselage roundel are visible (Real Photographs).



Bostons often featured fin flashes 27 inches high. On heavies the fin flashes measured 24 by 36 inches, stripe widths being 17-2-17 inches, and this applied to Manchesters and some of the OTU Whitleys. Dull Red codes introduced at roughly the same time were referred to in the previous issue.

By July, bombers were operational in two schemes—Night: Dark Green and Dark Earth with smooth Night, and Day: Dark Green and Dark Earth with Sky under surfaces, with Dull Red codes and serials, although here again some Bostons were different, retaining black serials for many months. Code letters were usually about four feet high on the heavies varying in style and precise location, 24 inches high on Mosquitoes and 30 inches high on Bostons. A few Bostons were painted black overall for intruder operations on the Bremen 1,000 bomber raid, some of 226 Squadron's aircraft being seen with red codes and serials.

Always odd man out was the Mosquito. Even before it was operational it had been decided to replace Dark Earth camouflage by Ocean Grey, and to paint the undersides in Medium Sea Grey. This took time to implement and well into summer Mosquitoes were still to be seen in the old scheme, but these were probably not used operationally because it had been decided to rely upon camouflage as a ruse. Bomber Mosquitoes were

A line-up of Bostons of 88 Sqn in summer 1942. RH-C:Z2230 has non-standard roundels and fin stripes and others in the line also have them. AL690, the second aircraft, has red codes.



unarmed, and there was constant fear that enemy fighter pilots, knowing this, would be more likely to press their attacks—assuming they could catch the raiders. Sky spinners and tail bands making the bombers look like fighters were therefore introduced, and some Mosquitoes even had yellow wing leading edges. These features were only retained until July 1942. They were a nuisance on low level operations, making the aircraft too easily visible. There is no doubt that some Mosquitoes wore a dark shade of grey—probably Dark Sea Grey—instead of Ocean Grey. When in July the order was given to paint the spinners Ocean Grey it could easily be seen that the two greys used were quite different. One of the Ocean Grey-Dark Green-Medium Grey Mosquitoes with Sky spinners and tail band was GB-M:W4069 thus recorded June 26. There were, of course, various combinations of the approved markings to be seen, but the most unusually marked Mosquito that I saw, one of the early BIV series I aircraft, was

painted in Dark Green and dark grey with Sky under surfaces and very exceptionally had Type C roundels under its wing tips. This I recorded on October 14.

The first 'Mosquito spectacular' was a raid on Flensburg on July 2, six Mosquitoes making a low-level attack. A week later another attack on Flensburg was made as a diversion to 40 Lancasters from Nos 83, 97, 106 and 207 Squadrons making a dusk raid on Danzig. Two Mosquitoes used with Sky adornments were GB-C:W4070 and GB-O:DK297. Mosquitoes making daylight cloud cover attacks on Germany carried on until October, when the rôle changed. No 105 Squadron tried to attack Berlin on September 19 but bad weather ruined the raid. On September 25, with GB-G:DK296 leading, a low level raid was mounted on the Gestapo HQ in Oslo. With the daylight getting shorter it was decided to mount dusk and dawn attacks. Exhaust stacks of the aircraft used on such operations were now shrouded, very unpopular for it brought varying troubles.

At the end of May 1942, a new shape had joined Bomber Command, the dumpy Lockheed Ventura, the first of which reached Britain in April. No 21 Sqn equipped with Venturas and received its first North American Mitchell in July, too. Two new squadrons, No 487 formed in August and 464 formed in September, also at Feltwell, worked up on Venturas. These were finished in Dark Green-Dark Earth-Sky initially, and indeed for much of their service, although there was a brief period in September when some of 21s aircraft had black under surfaces. Red codes and serials were usual, as on EG-O:AJ216. Others similarly marked noted on February 7 were YH-O:AJ452 and YH-S:AE852. The first coded specimen I recorded I saw in July 1942 wearing forward the squadron codes 'TU' in red. No 21 Squadron began operations on November 3, but it was on the Philips raid of December 6 when they entered the operational scene in force.

Highlight of August 1942 was undoubtedly the formation of No 8 Group, the Pathfinder Force. It formed with the disapproval of the C-in-C, who was against establishing a force of elite crews gathered from all the squadrons of Bomber Command. The Air Staff pointed out that the results achieved so far with *Gee* were not good enough, and that something had to be done to improve accuracy. The PFF would lead operations and study methods to improve accuracy. The nucleus of 8 Group comprised 7 Sqn (Stirlings), 35 Sqn (Halifax II), 83 Sqn (Lancaster I) and 156 Sqn (Wellington III), equipped with *Gee*, and at a time when this was likely to be jammed. Tasks of the crews were to find the target, illuminate the target area and then mark it with flares and incendiaries, continuing the latter until the attack was well under way. If the weather was cloudy they would mark the target area with coloured flares. An incendiary wave would then attack and finally the Main Force with HE and incendiaries.

There were serious snags. Flares would quickly drift, and they could dazzle other crews and illuminate the aircraft for enemy gunners. *Gee* was being jammed, incendiary markers were soon lost when the Main Force attacked. There was frequent drift in the bombing, and so there was no room for complacency. Fortunately, fears that the aircraft would be sitting targets on their final run seemed unfounded. Luck was out at the start, for when the first PFF-led raid took place against Flensburg on August 18/19 (when Stirling MG-E:BF335 and Halifax TL-M:W1160 took part) the weather was bad, the attack going completely astray. By the end of 1942, 26 attacks had been PFF-led with varying success, but six times they had failed to find the target.

A possible solution to some problems seemed to lay in a very high flying aircraft using a special radio aid, *Oboe*, and the Wellington VI was available. As long ago as 1938, a high flying



Below left: Lancaster L7540 wears the codes OL-U of 83 Sqn in summer 1942. The codes are in size based upon those carried when the aircraft was with 44 Sqn, which have not been painted out and are clearly visible, whereas 83 Sqn usually had larger codes in quite thin strokes, certainly into 1943 (Imperial War Museum). Above: OL-M:R5626 with red codes and serials in the summer of 1942 prior to the move to Wyton and 8 Group. She retained the coding, however. R5626 was lost on operations April 4, 1943, by which time she was flying with an H2S 'bump'.

variant of the Wellington had been proposed, to operate from 35,000 feet and even reach 40,000 feet, then an astonishing altitude. The crew were to be in the pressurised compartment built into the nose of the aircraft, which was to be powered by specially developed Bristol Hercules VIII engines. These were delayed and, in June 1940, it had been decided to fit as an interim measure Hercules IIIs. The first high-altitude Wellington R3298 designated Mk V flew in the summer of 1940. Much of the development flying was done from Squires Gate. There were many problems to overcome, particularly concerning icing and the intense cold. A second aircraft, R3299, was fitted with Hercules VIIs but they were unsuitable for operational work. Interest then switched to installation of Merlin 60s, two being fitted in W5795 (the next aircraft), now completed as the first Mk VI and finished in prototype colours, and flown in 1941. It was impossible to have a gunner in the tail turret at the altitude where the aircraft was to perform and so a remote control system for the turret and guns was worked out using periscopic sighting. Despite largely unsolved problems, and risks to the crew, production of the Mk VI came under way with W5797-5815, delivery of which began in October 1941. These and DR471-479 were designated Mk VIA, whereas the remainder with 'G' serial suffix were known as Mk VIG and fitted with *Gee*, as were DR480-504 and DR519-



One of the early Lancaster IIs, DS604 with red codes and serials.

528. Delivery of these machines spanned from May 27, 1942, until the end of March 1943. Nearly all spent their time in MUs until they were scrapped. They were probably delivered in the prescribed factory finish of Dark Green-Dark Earth-with Deep Sky sides and under surfaces, although some certainly acquired grey and green upper surfaces in RAF hands. However, two examples, W5801 and W5802 were delivered to 109 Squadron at Stradishall in March 1942. This was a radio counter measures trials squadron and the Wellington VI had possible use. W5802 passed to the RAE on May 17 but W5801, despite an assortment of snags, was retained at Stradishall until July. Both aircraft had at some time been re-painted Deep Sky overall and had only Type B roundels. Another Mk VI that I saw on July 30, incidentally, had Sky under surfaces. Tended in particular by Rolls-Royce engineers, W5801 was modified for some reconnaissance rôle. Despite all reports to the contrary, it seems that she made at least two operational flights over Germany in daylight.

A possible use for the Mk VI seemed to be as a flare dropper equipped with the new navigation aid, *Oboe*. A 1941 invention, it comprised two ground stations in contact with a receiver in the aircraft. One, the 'mouse' station, emitted an oboe-like sound which the crew of the aircraft could hear in their headphones. Whilst they heard the note they knew they were flying on the

Continued on next page

Bombing Colours—continued

correct course. The set in the aircraft returned a signal to the 'cat' station which in turn sent back a signal picked up on the run up to the target. When it abruptly ceased the bomb aimer released his load. The greatest handicap to the equipment was its limited range, but the higher the aircraft flew the greater this would be. Only one aircraft could be handled at a time on the run-up and it meant flying straight and level for about ten minutes, not a healthy form of entertainment. *Oboe* could only



be available on one raid to a small number of aircraft. Thoughts initially turned to the Wellington VI but then a better proposition came into view, the Mosquito. Accordingly, DK300 arrived at Stradishall for fitting out on July 21, 1942. Because 109 Sqn was now switching to target marking, the squadron moved to Wyton, the 8 Group centre, where more Mosquitoes arrived to receive *Oboe*. One was DK318 which I logged on August 21. Like the others, it was in grey-green finish, but in this instance her Ocean Grey spinners contrasted strikingly with the other grey of the top decks. During October the under surfaces of the Mosquitoes were painted black and in November red codes were applied, HS appearing aft on both sides of the aircraft. DK333 became HS-F and DK318: HS-B. A further brief flirtation with the Wellington VI came in December 1942-January 1943 when DR481 and DR485 served with 109 Squadron, but they were clearly out-classed by the Mosquito, although their load-carrying capacity as backers-up looked useful. By then the Mosquitoes were in operation, attacking from 26,000-28,000 feet, almost the height at which the Wellington was supposed to operate. On December 20, six Mosquitoes, including HS-C:DK321 and HS-D:DK331, both with long-range wing tanks, were despatched on a calibration raid on the power station at Lutterade, Holland, which proved remarkably successful. They soon embarked on a determined attempt to mark the Krupp works at Essen.

As the PFF returned from Flensburg on August 18/19, another force was about to attack, for the Dieppe landing opened at 0510 hrs. Bomber Command had only a limited but none the less spectacular share in the raid. Bostons of 2 Group covered the first landing parties by dropping smoke bombs on the cliffs. During the day some extremely courageous flights were made by other Boston crews laying smoke from SCI gear, MQ-B:Z2281 being one aircraft used for this. Army co-operation Blenheims were scheduled to lay smoke but their missions had to be abandoned. Bombing support given to the army was small, partly due to the confused situation. The day's operations cost the RAF 106 aircraft.

An interesting feature at this time was the assortment of

Above: X3595 served with 75 Sqn from January to March 1942 as a Mk III. She was modified into a Mk X trials aircraft by Vickers in March and passed to Filton, fitted with Hercules VIs in May 1942. She was used for Mk X development flying. Note the extended intake above the cowlings. Exhaust pipe is on the starboard side of the cowlings (Imperial War Museum). **Below:** X3763 was a standard Mk III Wellington. Red codes and serials. She is seen here in late summer 1942 and was lost on a raid on Stuttgart April 14/15 1943 (Real Photographs).



colours carried by Blenheim VDs used by 2 Group squadrons working up for their part in the forthcoming campaign in North West Africa. I recorded one on June 28 in Ocean Grey and Dark Green with black under surfaces and sides. Another without a dorsal turret—this was common—had a tall radio mast in its place and was finished in Dark Green-Dark Earth-Sky with 'U' in red forward of the roundels. Another coded PF-P in red was black overall, when seen on July 27, but most of them had Sky under surfaces. On November 12, I noted another similar machine in Dark Green-Dark Earth-Sky finish with red codes and very long flame damper exhausts, and at the same time another was seen with azure under surfaces in place of Sky. On August 23 I noted Blenheim IV all black with DP-A in red and a very small red serial. Her fuselage roundels were Type B.

Although Dull Red was the colour now specified for bomber codes, there were the inevitable exceptions. Lancaster EA-O had grey codes on November 29, and when 1651 Conversion Unit introduced 'QQ' codes to its Stirlings in February 1943, some aircraft had grey codes. For the most part, however, the bombers conformed, like Stirling MG-P:R9267 with a 'Botha-type' dorsal turret and MG-X:R9324 which had no dorsal turret. Some of 106 Squadron's Lancasters were also flying at this time without dorsal turrets, whereas Halifax DY-Z, seen August 20 with the customary 'Hudson-type' turret, had a fairing around the base similar to that on the Lancaster. Wellingtons in use at this time with red codes and CI roundels, etc, included AA-N:BJ679 and AA-Z:BJ832. Other aircraft in standard markings included Wellington IV QT-S:Z1338, and BH-S:Z1465, Stirling 1 OJ-W:N6079 (with 'Lancaster' turret) and Lancasters OL-M:R5626 and OL-H:R5743. Halifaxes included MP-P:BB242 and TL-B:W1047. At first the Mitchells of 98 Sqn—from the start wearing dark green/grey finish—had their codes flanking the fuselage roundel, like VO-T (VO forward both sides) recorded thus on December 13, 1942. FL203 and some early ones had black serials set very low on the fuselage.

By September the die had been cast for the future Allied bomber offensive. Units of the US 8th Air Force had begun to



W5795, the first prototype Wellington VI, in prototype colours of Dark Green and Dark Earth upper surfaces, with yellow undersides. No ringed 'P' is carried.

take up stations in Britain and the first small-scale operations had taken place over France. The Americans were to operate by day, Bomber Command heavies by night. Day bombers of the RAF would eventually switch to army support in a tactical air force still some time away. But Bomber Command possessed a sizeable Lancaster force and the belief died hard that somehow the Lancasters could battle their way through into Germany in daylight. Their range was attractive and 61 Squadron had a brief involvement with the war at sea. It was detached to St Eval, Cornwall, on August 3 to search for enemy shipping off western France. There were two highlights, one on August 19 when a large tanker was spotted in Biscay and nine Lancasters set out to sink her, losing two of their number, R5661 and R5605. With the help of a Whitley of 502 Sqn, R5888 sank the German submarine U-751. But Bomber Command needed all its Lancasters and 61 was back at its base on August 22. When 83 Squadron was transferred to the Pathfinder Force in August the Lancaster force was maintained by transferring 57 Sqn and its Wellingtons to 5 Group and then re-equipping the squadron.

At the end of September, highly secret orders reached 5 Group stations. Their squadrons were to prepare for a low level raid in force and, in a great gaggle, flew a low level training mission around Britain on October 1. Then they awaited the day of the raid, ordered October 17. Ninety-four Lancasters from nine squadrons, virtually the entire Lancaster force, were despatched

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Top: R3299, the second prototype Wellington VI in prototype colours. **Above:** A production Wellington VI, DR484. Note that the side windows are retained. Finish is Dark Green-Dark Earth-Deep Sky (Imperial War Museum).

in the afternoon. Flying very low and led by Wg Cdr Slee in W4196, they headed out over south-west England, swept round the Brittany peninsula and turned into France at Ile d'Yeu. Then they flew a dog-legged course to the great Schneider arms factory at Le Creusot which 81 aircraft claimed to attack with over 100 tons of HE and 40 tons of incendiaries. Five others of 61 Sqn bombed the transformer switching station at Montchanin. Incredible, it seemed, when the force landed back in darkness, that only W4774 of 61 Squadron was missing. There had been hardly any fighter reaction nor much flak. It was decided to strike again.

On the afternoon of October 24, 88 Lancasters escorted across the Channel, set out to attack Milan at dusk, a round trip of about 1,700 miles. They had cloud cover over France and made their ways individually to the target. Over Italy a few Fiat CR 42s and Macchi 202s were seen but they wisely kept well away from the armada but for the odd brave soul. From Lake Annecy, loose formations had been formed for crossing the Alps. Cloud was down to 3,000 feet over Milan, so the bombing was from low level and quite a large number of 4,000-pounders were carefully placed. Some aircraft went in very low, one intrepid crew racing over the city at a mere 50 feet. One can well imagine the panic the raid caused, and it was a very damaging attack, too. Only one Lancaster was shot down in Italy, two more falling to night fighters on the way home. As the Lancasters were touching down, more bombers were making a second wave night raid on Milan. Included in the daylight raiders were OF-H:R5538 and EM-U:W4134.

Autumn saw new bomber variants appearing. First, there was the Wellington X. A change in structure materials, coupled with higher power from Hercules VI or XVI engines, permitted increased load, although for operations over Europe from Britain the Wellington's bombing days were clearly numbered. The Mk Ic had a gross weight of 28,500 lb, whereas the Mk X tipped the scales at 36,500 lb, no mean achievement as far as development was concerned. Its top speed was 255 mph at 14,500 feet and it had a service ceiling of 19,600 feet. It could carry a 4,500 lb load for 1,470 miles. It came along at a time when a Mk III replacement was needed and usefully equipped some new Canadian squadrons whilst they awaited four-engined aircraft. Main users of the Mk X were the OTUs, which employed them to the end of hostilities. X3374 was the prototype. The first production machine, DF609, was completed in July 1942 and used for trials at Boscombe and Filton. Subsequent Mk Xs were DF686, '701 used by 22 OTU, '730 being sent to the Middle East where many later served. Production got under way at Chester with HE147. The first to reach a squadron was HE149, delivered to No 466 Sqn. Other early recipients were 428 Sqn (eg, HE173), 429 Sqn (eg, HE160), and 431 Sqn (eg, HE203). A considerable number of Mk Xs had been delivered in late 1942, although operations did not begin until early 1943.

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External differences between the Mk III and Mk X were almost nil. Early Mk IIIs with Hercules XI had the engine exhaust pipe on the port side of the cowlings and the forward end of the air intake ended at the gill ring. Later Mk IIIs, also with Hercules XI, had the exhaust pipe on the starboard side but the air intake was extended, incorporating a filter, to the exhaust collector ring. Probably all Mk Xs had this, and many also had a propeller spinner fairing. One of the early Mk Xs was SE-G:HE198, another was DT-K:HE203 of No 192 radio counter measures Squadron based at Feltwell. HE222 was QB-E by March 1943.

As an insurance against loss of Merlin engine deliveries, two Lancasters (DT810 and DT812) were ordered to be fitted with Hercules engines. DT810 in standard prototype colours of Dark Green, Dark Earth with yellow under surfaces and 'P' prototype marking first flew on December 21, 1941. Production was by Armstrong-Whitworth at Coventry, the first example, DS601, being delivered September 1942, and used for AAEE trials along with DS602. Squadron shake-down for these machines was with 61 Sqn, DS604 becoming QR-W, and others used included DS607-612. The first squadron to be fully equipped was No 115 based at East Wretham, beginning at the end of 1942.

Early examples of the Mk II did not have propeller spinner fairings which gave a sleeker appearance to the later Mk IIs. Usually the IIs had a ventral FN64 turret or provision for one, useful against enemy night-fighters with upward firing guns. Many also had bulged bomb doors to accommodate the large 8,000 lb bomb. The first successful sorties by Mk IIs, of 115 Sqn, were carried out on January 16/17, 1943, against Berlin, DS608 and DS609 taking part. DS614-627 were all early deliveries to the squadron.

Another source of engine production for the Lancaster was the American Packard line. Their Merlin 28 was installed in R5849 but the true prototype was W4114, first flown in August 1942. Production examples began to appear in April 1943, with the batch W4983-5012. It was impossible to distinguish these aircraft externally, for even the serial numbers gave no sound clue. Some Mk Is were re-engined, and some aircraft even had a mixture of engines.

At the end of 1942 the production Halifax Mk II series 1A with a neat curved transparent nose and provision in it for a Vickers K gun appeared. It could have either Merlin XXs or XXIIIs which, combined with streamlining, added about 20 mph to its top speed. In the dorsal position a 'Defiant-type' turret was fitted, also a feature of some Mk IIs with the 'solid Z-type' turretless noses. HR654, believed to be the first Mk II series 1A was delivered to No 408 Sqn on December 21, 1942. No 408 equipped first, then deliveries were made to Nos 102, 35, 10, 158, 51 and 405 Squadrons, although there was no steady stream of re-equipment. At the end of 1942 the Halifax V also appeared, in two versions, the Mk V series 1 (Special) and series 1A corresponding to earlier Mk II variants.

During the autumn, some re-orientation of bombing attacks came about. The invasion of North-West Africa was scheduled for November. To encourage the Axis to keep aircraft for Italian defence, attacks were ordered on Genoa, Milan and Turin. Mines

Continued on next page

Mosquitoes setting off for a training flight in December 1942. GB-J is DZ367. She was lost on the Berlin raid of January 31 1943, when flying with 139 Sqn, and it seems possible that the aircraft was still coded GB-J and on loan to 139 Sqn. This was her tenth sortie (Flight).



Bombing Colours—continued

were laid off Genoa and Spezia, and *Circuses* continued in an attempt to hold down Luftwaffe fighters. As the convoy for Operation *Torch* sailed on October 22/23 for Gibraltar, 100 Lancasters were bombing Genoa, the first night raid on Italy for a year. This very successful attack was followed by five more in three weeks. From November 18/19, seven attacks each by about 200 bombers were made on Turin.

It was during the third of this series, on November 28/29, that the Australian, Flt Sgt R. H. Middleton, was posthumously awarded the Victoria Cross. His Stirling, OJ-H:BF372, was hard put to cross the Alps and used up a lot of fuel. Middleton pressed home his attack from only 2,000 feet and on his third run his aircraft was hit. Jagged metal hit his right eye, tore his face and penetrated a leg and his chest. Others in the crew were also injured and Middleton determined to get them all home. The second pilot righted the aircraft at 800 feet and when Middleton regained consciousness he took over the controls, nursing the Stirling back to the English Channel despite more flak on the route. Five of the crew baled out, leaving two to stay with their captain, all to perish when the Stirling dived into the sea.

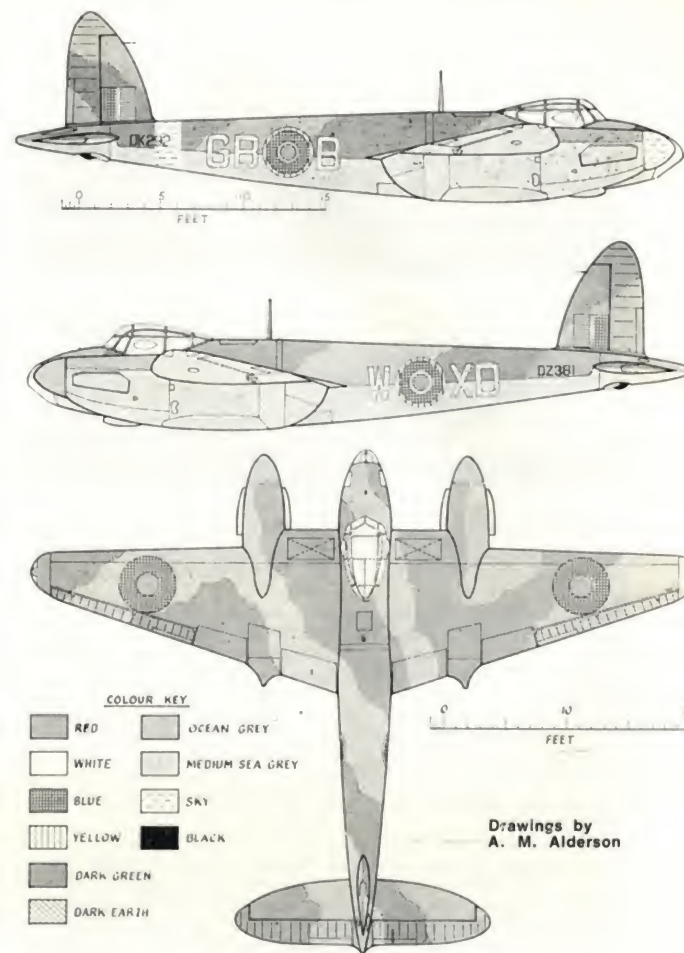
Circuses using Bostons continued, to hold back fighters and damage the French rail network. Nos 105 and 139 Mosquito squadrons carried on their brilliant low level attacks mainly against rail targets, spectacular raids being made on Liege and Hengelo and, on January 27, the Burmeister Wain factory at Copenhagen, when aircraft taking part included XD-P:DK336, XD-Q:DZ416, GB-K:DZ413 and GB-O:DK338. Their highlight, though, without doubt, was the two-wave day raid on Berlin on January 30 by three aircraft (GB-K:DZ413, GB-F:DZ408 and GB-C:DZ372) of 105 Sqn in the morning and three others (GB-N:DK337, GB-H:DZ379 and GB-J:DZ367) in the afternoon, flown by crews of 139 Sqn.

Another spectacular raid of the winter came when 93 day bombers attacked the Philips works at Eindhoven on December 6. After some low level practices over England, they were able to deliver their attacks in waves, Bostons leading and Venturas, making their first major operation, bringing up the rear. Aircraft taking part included Bostons RH-U:AL693 and MQ-L:AL285 and Venturas YH-B:AE892 and SB-Q:AE702.

In January 1943, No 1 Group was getting Lancasters, 4 Group converting remaining Wellington squadrons to Halifaxes. By February, Bomber Command had a strength of 50 squadrons, 35 of them flying four-engined bombers. Many now had the much improved Mk XIV bomb-sight. They could carry High Capacity blast bombs, be guided by an *Oboe* force now dropping newly-developed target indicators—and some aircraft had H2S radar. Each so fitted had what amounted to primitive TV gear which presented a radar picture on a cathode ray tube, showing a reasonable illustration of the terrain below, enabling large landmarks to be clearly seen on clear or cloudy nights. Halifaxes of 35 Sqn were the first with the characteristic H2S 'bump' below the fuselage (no one then talked of radomes) and they could be seen fitted in several aircraft by mid-October. By the end of the year, H2S had been installed in twelve Halifaxes and twelve Stirlings of 7 Sqn. Lancasters of 83 Sqn acquired them in January.

A much refined offensive was getting under way by February. Hamburg was bombed on the 3rd, 198 aircraft were despatched to Turin on 4/5th when four Lancasters dropped 4,000 lb bombs on Spezia. To Milan on 14th, 142 aircraft were sent and St Nazaire was attacked on 28th; *Oboe* Mosquito HS-F:DK333 at the head of the force.

By March 1, Lancasters equipped Nos 12, 100, 101, 103 and

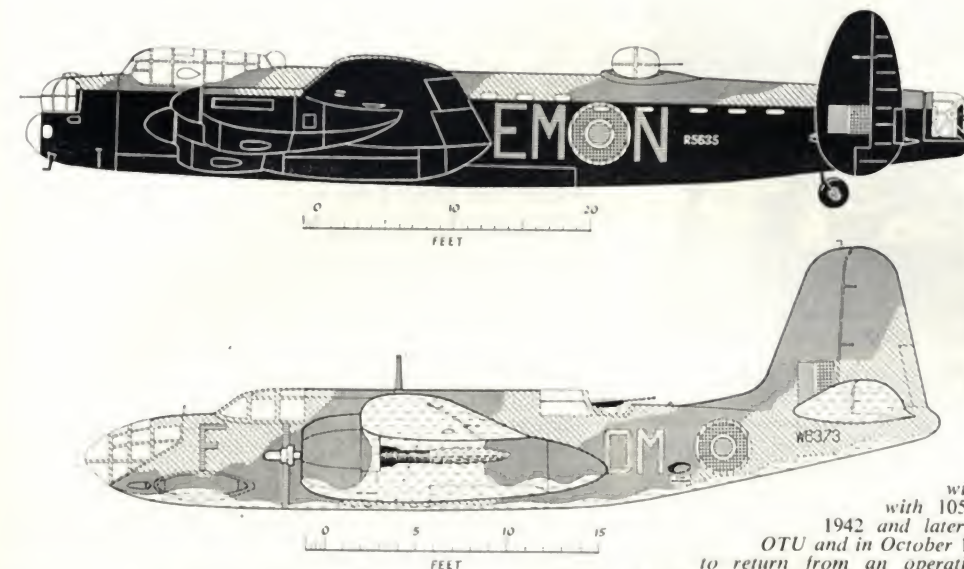


Drawings by
A. M. Alderson

Below: Mosquito IV DK291 with Sky band and spinners, photographed on May 29 1942 at Hatfield. Finish is grey and green. Although it had a long career it flew very few operational sorties. It was initially delivered to 105 Sqn on June 21 1942 and was destroyed in a crash two weeks before the war ended.

460 Sqn of 1 Group and 5 Group had ten squadrons, too. Many of the Lancasters now had Merlin 22s. They were being operated with very mixed loads including 4,000 lb HC bombs, 14 x 250 or 14 x 500 lb bombs or mixed loads including Small Bomb Containers carrying 8 x 30 lb or 90 x 4 lb incendiaries. On March 1/2, Berlin was the target for 5 Group, then Bomber Command prepared for the opening shot in the Battle of the Ruhr. Hidden in haze, the giant Krupp works at Essen had so far escaped much damage despite countless sorties despatched against it. Recently, *Oboe* Mosquitoes had several times tried their skill at marking it and all was set for a series of mighty blows. On March 5/6 the target for 450 aircraft was Essen, upon which, with eight *Oboe* Mosquitoes of 109 Sqn in the lead (including DZ356:J), a devastating 38-minute attack was made, 500 tons of HE and 550 tons of incendiaries raining down upon the giant factory. The night offensive had turned on to its final run, things would never be the same again.

Michael J. F. Bowyer



Drawings by A. M. Alderson

photoPAGE

Due to some longer articles this month, space is shorter than usual. Our reduced size Photopage devotes itself solely to Corsairs, supplementing the article on page 12. Captions by Alan W. Hall. We revert to a full page next issue.

Below, right: Corsair NZ5393:P is typical of RNZAF aircraft in squadron service in the Solomons. Note that the camouflage scheme has deteriorated into a mixture of greys due to the aircraft's exposure to bright sunlight. The arrestor hook has been removed. **Below:** This aircraft, 'Patricia May' (in white), belonged to No 2 (RNZAF) Support Unit and was previously a US Navy aircraft 57463. Its serial here is NZ5457 and is seen on a post-war scrap dump. The code number '57' appears forward of the roundel in yellow, but is barely visible (photos via Rees H. Jones and Richard L. Ward).



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Above: These RNZAF Corsairs are thought to belong to an OTU in New Zealand. Codes RK, UY and ZC or G appear on the fuselage of most of them. Note the style of the fuselage roundel and the narrow red, white and blue tail stripes with US Navy BuNo stencil is visible adjacent to nearest aircraft.



Left, upper: Lancaster R5635 joined 207 Sqn on June 1 1942. It participated in the October raid on Le Creusot. In February 1943 it came on the strength of 1661 Con Unit and ended life as 3508M. Red codes EM-N and serials. **Left, lower:** Boston III W8373 of 107 Sqn in late 1942. She joined 107 Sqn early in 1942 and served until March 1943 when she was transferred to North Africa and joined 114 Sqn as 'A'. In the finish shown she participated in the Eindhoven raid of December 6 1942. Red codes and black serials. **Opposite page, upper:** Mosquito IV Series II DK292 with Sky band, spinners and codes. Yellow wing leading edges. DK292 was

with 105 Sqn from June to October 1942 and later served with 1655 MTU, 13 OTU and in October 1944 joined 192 Sqn. She failed to return from an operation in the Munich area on November 27 1944. **Opposite page, lower:** Mosquito XD-W: DZ381 of 139 Sqn. She joined the squadron on November 30 1942 and collided (near Kassel) with XD-R:DZ602 on the famous Jena raid of May 27 1943. It was her 13th operational flight.

AMERICAN HALF-TRACKS



by Peter Chamberlain

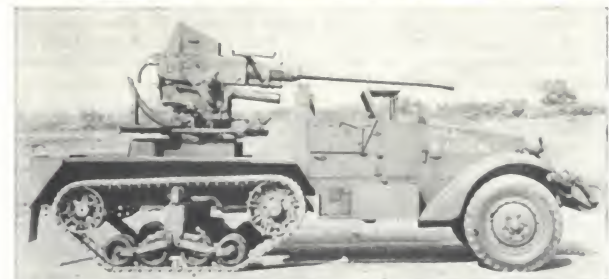
Part 3: Multiple and Gun Motor Carriages

As mentioned in the last instalment, the M3 series also provided a basis for a whole range of expedient 'stop gap' designs of gun and howitzer self-propelled (ie, motor) carriages. These are described here.

40 mm Gun Motor Carriage, T1: Development of this weapon was begun in May 1941. It was intended to provide anti-aircraft protection for combat units. Gun, director, and power plant were to be mounted on the same chassis. The vehicle chosen was the Half-Track Chassis, T3, an experimental vehicle designed by the Mack Manufacturing Corporation. Mounted on this vehicle was a 40 mm Bofors gun, a Kerrison Director, and power plant. As the chassis proved unsuitable, the project was ended.

40 mm Gun Motor Carriages, T54 and T54E1: The T54, mounting the 40 mm gun, M1, on Half-Track Personnel Carrier M3 chassis was intended as an anti-aircraft weapon. Development was begun in June 1942, and one pilot model was completed and tested. A second pilot model was built with modifications to increase stability during firing, this vehicle was designated T54E1. Tests of the T54E1 showed that to stabilise the vehicle, both jacks and out-riggers would be required. The project was ended, the tests supplying engineering data for the T59 and T60 Gun Motor Carriages.

Multiple Gun Motor Carriages, T60 and T60E1: As a result



Top: GMC T59E1. Above: AA Gun Motor Carriage T54 (All photos US Official and courtesy Col R. J. Icks).

of the trials of the 40 mm Gun Motor Carriage T54, modifications were proposed and a project was started to mount a 40 mm anti-aircraft gun with twin coaxial machine guns on a Half-Track M3. Two pilot models were built. The Multiple Gun Motor Carriage T60, with Combination Mount T65, mounting one 40 mm Automatic Gun M1 and two calibre .50 machine guns. And the Multiple Gun Motor Carriage T60E1. This was a similar vehicle, but with modifications to the gun shields and stowage. This project was terminated in favour of later designs.

Multiple Gun Motor Carriage, T10: With the development of the Multiple Gun Motor Carriage T1, the use of either calibre .50 or 20 mm guns had been contemplated. As the calibre .50 gun mount had been developed with the T1 series, the development of a vehicle mounting twin 20 mm guns was authorised in July 1941. Guns considered were the Oerlikon, the 20 mm Automatic Gun Mk IV, the Hispano-Suiza, and the 20 mm Automatic guns, AN-M1 and M2 mounted in a power-operated aircraft type turret. As constructed, this equipment consisted of twin 20 mm Oerlikons mounted in a Maxson turret carried on Half-Track M3.

Twin 20 mm Gun Motor Carriage, T10E1: This consisted of an improved gun mount, the T17E1 mounted on a modified Multiple Gun Motor Carriage M16.

40 mm Gun Motor Carriages, T59 and T59E1: The purpose of this development was to mount a 40 mm power-operated anti-aircraft gun on a Half-Track M3, with the director and generator carried on an accompanying half-track, designated T59. This vehicle was fitted with quickly emplaced out-riggers and the means of blocking out the springs. As a result of the data received from the tests of the T54E1 carriage, the T59 was modified and provision made for mounting the Firing System, T17. The modified vehicle was designated T59E1.

Half-Track Instrument Carrier, T18: This was the companion vehicle for the 40 mm Gun Carriage T59, based on the same type of vehicle, Half-Track M3, and carrying Director M5 and Generating Unit M5 with a transmission cable to supply power and control to the gun mount on the other vehicle.

40 mm Gun Motor Carriage, T68: Projected in 1943, this weapon consisted of two superimposed 40 mm guns with overhead equilibrators mounted on the chassis of Half-Track personnel Carrier M3. One pilot model was built and tested: found unsuitable, the project was dropped.

57 mm Gun Motor Carriage, T48: This vehicle consisted of a 57 mm Gun M1, on 57 mm Gun Mount T5 fitted on a Half-Track Personnel Carrier M3. Its development was initiated by an Ordnance Committee action in April 1942, as an expedient mounting for the 57 mm (6 pdr) gun pending the development of a more suitable motor carriage for the weapon. It was originally expected that the vehicle would be manufactured to fill both United States and British requirements, but later developments resulted in production for the British only, the production programme being initiated in October 1942, with suitable British specifications. The 57 mm gun was mounted on the centre of the vehicle, immediately behind the front bulkhead, and fired to the front. A pivoted gunner's seat was provided, swinging independently of the gun. A travelling lock, with quick release, held the gun in place above the engine bonnet when not in use. The gun shield was of sloping, face-hardened armour plate, $\frac{1}{2}$ inch thick at the front and $\frac{1}{4}$ inch at the sides and overhead. The 57 mm gun had an elevation from -5° to $+15^{\circ}$ and could be traversed $27\frac{1}{2}^{\circ}$ right to $27\frac{1}{2}^{\circ}$ left. Provision was made for carrying five British Lee-Enfield rifles. The vehicle was equipped with a British Wireless Set No 19; 962 of these vehicles were built by White, of which 680 were supplied to the British and the remainder were reconverted to M3A1 Carriers. These vehicles saw only limited use for by the time of their arrival in 1943 the 6 pdr was considered inadequate as an anti-tank gun and British armour doctrine made no provision for the use of half-tracks as SP guns. Many T48s were passed on to Russia and others were converted to troop carriers.

Weight: 19,000 lb (gross); Crew: 5; Height 7 ft; Armour on Gun Shield (front): $\frac{1}{2}$ inch, (sides and top) $\frac{1}{4}$ inch; Ammunition stowage (AP M70): 99 rounds. All other details of vehicle as for Half-Track M3.

75 mm Gun Motor Carriage, T12: In June 1941 a project was begun to mount a 75 mm gun on a Half-Track Personnel Carrier M3 for tests as an expedient tank destroyer, to be used pending design and production of a purpose-built self-propelled weapon intended primarily for anti-tank use. Use was made of the 75 mm Gun M1897A4 on a pedestal mount, firing forward, and protected by a gun shield. Designated 75 mm Gun Motor Carriage T12, tests were carried out with a pilot model, various types of gun shields being used. Design was standardised in October 1941 as the 75 mm Gun Motor Carriage M3. The 75 mm gun was from old ordnance stocks, the M1897A4 being used by the US Army on a field carriage before 1940.

75 mm Gun Motor Carriage, M3: This vehicle was the first standardised American self-propelled anti-tank weapon used in World War 2, providing high mobility for the 75 mm gun, it was put into production in time to aid in the rout of the German Army in North Africa. The 75 mm gun was carried on a Mount M3, a design adapted from the 75 mm Gun Carriage M2A3. It could be traversed 19° to the left and 21° to the right, and elevated from -10° to $+29^{\circ}$. The shield traversed with the gun. The gun was loaded and operated from the crew compartment. Stowage space was provided for 59 rounds of ammunition and for a cal .30 rifle and four cal .30 carbines, the personal equipment of the crew. The fuel tanks were mounted at the rear, on each side of the vehicle. The body armour was the same as that of the Half-Track Personnel Carrier M3, including hinged protective shields for the windscreen and side doors. The vehicle was equipped with two-way radio. An APC projectile fired from the gun had a muzzle velocity of 2,000 feet per second, and could penetrate 3 inches of face-hardened armour at 1,000 yards. This vehicle was declared obsolete in September 1944. It was used in the Pacific Theatre and by the USMC as well as by the US Army.

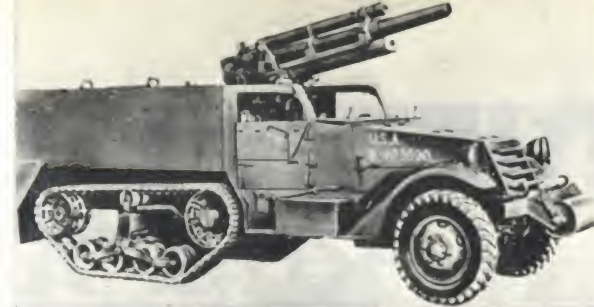
Weight: 20,000 lb (gross); Crew: 5; Armour on Gun Shield (front, sides and rear): $\frac{1}{4}$ inch; Ammunition stowage (75 mm HE/APC/AP): 59 rounds; Height: 8 ft $2\frac{1}{2}$ inches. Vehicle details as for Half-Track M3.

In Tunisia, Sicily, and Italy, this particular vehicle was also used by the British in the HQ squadrons of some tank regiments to provide extra fire support. To the British it was known as the 75 mm SP, Autocar, M3.

75 mm Gun Motor Carriage, M3A1: Due to a shortage of the 75 mm Gun Carriage M2A3, use was made of 75 mm Gun Carriage M2A2, from which was adapted the Gun Mount M5. It could be elevated from $-6\frac{1}{2}^{\circ}$ to $+29^{\circ}$ and traversed 21° right and 21° left. In all other characteristics this equipment was similar to the M3 GMC.

75 mm Gun Motor Carriage, T73: This was a redesigned M3 GMC, mounting a 75 mm Gun M3 instead of the model 1897A4 gun. The 75 mm Gun M3 was the same model as that used in the Sherman tank.

75 mm Howitzer Motor Carriage, T30: Successful use of Half-Track Personnel Carrier M3 as a basic vehicle for mounting the 75 mm gun resulted in the experimental mounting of the 75 mm howitzer on the same vehicle. Designed as an expedient to provide a 75 mm howitzer on a self-propelled mount, the project was initiated in October 1941 and a contract for the manufacture of two pilot models was given to the Autocar Co in December 1941. The weapon, designated 75 mm Howitzer Motor Carriage



Above: 105 mm Howitzer Motor Carriage T19.

T30, consisted of a 75 mm Howitzer M1A1, mounted on a Half-Track Personnel Carrier M3. The howitzer had elevations from -9° to $+50^{\circ}$ and a traverse of $22\frac{1}{2}^{\circ}$ right and $22\frac{1}{2}^{\circ}$ left. It fired a 14.6 pound projectile, with a muzzle velocity of 1,250 feet per second, and at an elevation of $13\frac{1}{2}^{\circ}$, the howitzer had a maximum range of 9,610 yards.

The T30 had a rear door, and a modified Pedestal Mount M25 at the rear centre for mounting a Cal .50 Machine Gun, M2 HB, for anti-aircraft protection. There was no skate rail inside the vehicle body and the fuel tanks were fitted at the rear sides. Various designs of gunshields were constructed and tested at the Aberdeen Proving Ground. Subsequently, 500 of these vehicles were manufactured by the White Motor Co, though 188 of them were later re-converted to Half-Track Personnel Carrier M3 standard.

Weight: 19,500 lb; Crew: 5; Ammunition stowage (75 mm): 60 rounds; Height: 8 ft $\frac{1}{2}$ inch; Armour (windshield) $\frac{1}{4}$ inch, (gunshield) $\frac{1}{2}$ inch, (sides and rear) $\frac{1}{4}$ inch. Other details as for M3.

105 mm Howitzer Motor Carriage, T19: This weapon was designed as an expedient to provide a 105 mm howitzer on a self-propelled mount. The project was initiated in October 1941. Mounted on the Half-Track Personnel Carrier M3, the principal weapon was the 105 mm Howitzer M2A1 on 105 mm Howitzer Mount T2. With elevation from -5° to $+35^{\circ}$ and a traverse of 20° right and 20° left, it fired a HE shell with a muzzle velocity of 1,550 feet per second. A range of 11,700 yards was achieved with maximum elevation of the gun. The T19 had a rear door, and was fitted with a modified Pedestal Mount M25 for mounting a Cal .50 Machine Gun M2 HB for anti-aircraft protection. There was no skate rail fitted inside the vehicle and the fuel tanks were mounted at the rear sides. Various gunshields were fitted. The T19 was first used in North Africa and equipped the HQ companies of some tank battalions to give fire support. In 1943 they were replaced by the M8 Howitzer Motor Carriage which was developed as a specialised type for this role. Diamond T built a total of 324 T19s.

Weight: 20,000 lb (gross); Crew: 6; Height: 7 ft 8 inches; Armour: (windshield) $\frac{1}{4}$ inch, and (sides and rear) $\frac{1}{4}$ inch; Ammunition stowage: 105 mm Howitzer, 8 rounds, and Cal .50, 300 rounds. All other details as for the basic M3 model.

105 mm Howitzer Motor Carriage, T38: A short tube 105 mm Howitzer T7 was mounted on the Half-Track Personnel Carrier M3 and was tested. However, no further development was undertaken.

(Further vehicles described this month will be illustrated in the next instalment.)

Below, left to right: 75 mm Gun Motor Carriage M3, 75 mm Howitzer Motor Carriage T30, Instrument Carrier T18.



NEW

KITS AND MODELS

Heller: ship kits

NOW that Riko are importing the complete range of kits by Heller of France, they are more widely available in the model shops, and we have recently been examining some more of their sailing ships. Particularly interesting are two examples of 17th century spritsail-top-mast ships, a type which few manufacturers have attempted.

The better of the two is the 84-gun two-decker *Le Phenix*, based on drawings in the *Atlas de Colbert* of 1664-1669 and a typical example of the French full-rigged fighting ship of that time, at a scale of about 1:175. A total of 503 separate parts go to make up this really excellent kit, which has the usual Heller hallmarks of sharp, sturdy mouldings, realistic wood graining, and clear instruction sheets. The fine detail of the mouldings is outstanding, particularly in the intricate stern galleries, and the amount of rigging shown will produce a very effective model even in the hands of a beginner, while more expert modellers will find ample scope for super-detailing the rig.

Our only criticisms are minor ones. The English translation of the instructions is occasionally shaky and the instructions themselves are not always entirely accurate. Care is needed, and kit diagrams 8 and 10 should be referred to when tying off each line at deck level. The other oddity is the mizzen staysail (part 164) which is nearly blanketed by the settee mizzen (part 172) and would almost never be used; it can quite logically be omitted altogether. Despite these criticisms, however, *Le Phenix* deserves a place in the collection of every ship-modeller.

The other kit is *La Sirene*, an almost identical ship for which Heller admit using the same hull as the *Phenix*. In fact the same decks, masts, yards and beak are also used, the only differences being in the much more ornate stern galleries and forecabin, the figurehead, and the very reduced number of sails. This technique of using a single hull with differing detail to represent different ships is quite common, but very few manufacturers show Heller's honesty in admitting it. In fact, *La Sirene* is quite an effective model in its own right, though a little on the gaudy side, but we give it full marks for the first really effective representation of furred sails that we have seen. For this simple and ingenious answer to a long time problem, this kit should certainly be honoured—other manufacturers please copy.

At their new reduced price of £3.99 both these kits are good value. N.C.L.H.

Sanderson: 54 mm figure

LATEST item from Cliff Sanderson is an addition to his range of attractive female figures. This one depicts a Viking lass, complete with horned hel-

met, battle-axe and drinking horn, but otherwise as nature intended! Despite her war-like trappings she has definitely a feminine personality with regard both to features and stance, and we congratulate Mr Sanderson on the way he has captured this female essence. At 75p this figure is excellent value either to paint up as it is, or to use as the basis for a conversion. Our review sample came from Greenwood and Ball, 'Martinhoe', East End Way, Pinner, Middlesex, who can supply at the above price plus packing and postage. R.S.D.

Lasset: 54 mm German soldiers

THE range of German figures of World War 2 has been increased by the addition of three SS Elite Guard types, an officer, a standard-bearer, and SS man, all in parade-dress. All are well up to the standard we have come to expect in John Tassel's work, being big, hefty, Teutonic types, with well-engraved detail and accessories. Issued at the same time is a 'Brown-shirt' wearing the characteristic uniform and kepi-style cap, and this, too, is of top quality. Lasset have also produced in their range of weapons an 80 mm mortar, which comes ready mounted on a base and complete with crew, which can be infantry, paratroopers, or SS men. Individual figures are priced at 90p each, plus packing and postage, and can be obtained from Greenwood and Ball, 'Martinhoe', East End Way, Pinner, Middlesex, through whose courtesy we received our review samples. R.S.D.

Tamiya: Torpedo boats

RECENTLY received is one of a new range of boat kits from the well-known Japanese firm of Tamiya. The series covers five of the modern type of torpedo boat. These fast, well-equipped vessels feature in most navies. As they are designed to perform basically the same duty, their main visual variation appears in the type of deck equipment fitted.

This particular kit depicts the Swedish 'Polaris' class. Tamiya call these 'semi-scale' as they use a common hull in all the models rather than a true scale hull. When completed the model measures just under 7 inches long with a beam of 2½ inches. Without the prototypes measurements it is difficult to determine a nominal scale.

Tamiya have produced this boat with a minimum number of parts and with very little flash. The assembly is quite straightforward. The hull is in one piece, the motor and batteries (these latter, which can be U7 or V12, are not included) are mounted on a sub-frame which clips on to two pillars, very little cementing being required. A small tube is included, however, also a tube of grease for sealing the entry of the prop shaft. A good point is that propeller and rudders are in soft plastic and so less liable to damage.

The whole deck assembly is held in position by two collars moulded as bollards, thus replacement of batteries, etc., is easy. Although pre-coloured in grey and white, a few minutes' work with brush and additional colours would considerably enhance the boat's appearance.

In performance it motors as fast relatively as its prototype—a half turn of the propeller starts the motor and pressure from thumb and finger on the boss will stop it. The kit is good value at 80p and small enough to chase submarines in the bath.

Riko of Hemel Hempstead are the importers and the 'Polaris' kit and the four others in the range (see picture) can be had from Tamiya stockists. B.L.

Revell:

1:32 scale Lockheed Lightning

LATEST from Revell in their popular 1:32 scale series is the largest model yet, a P-38J Lightning. This is a highly detailed model of spectacular size which is also very accurate, being modelled from an actual preserved machine. If anything the surface detail of rivets and panel lines is a little too prominent but this is toned down considerably after painting. Assembly of the model is perfectly straightforward, aided by a well-illustrated assembly diagram which takes the work in easy stages. More care is needed than with earlier models, however, for alignment of the twin booms and tail assembly is critical and could easily be ruined. During assembly it is essential to pack as much weight as possible into the fuselage nose and front end of the tail booms, otherwise the model will not sit on its tricycle undercarriage. Fishing weights and Plasticine are ideal ballast. If this is overlooked, however, Revell supply a strut to prop

Continued on page 44



Tamiya 'semi-scale' MTBs. Left to right: USSR 'Vostok' class, USN PT boat, British Vesper, Japanese PT-1, Swedish 'Polaris' class.

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New Kits—continued

up the tail for display purposes. In the usual Revell style the engine cowling panels are removable but, curiously enough, only one engine is supplied. Markings are given for Major Bong's 'Marge' complete with the big picture of Marge which was displayed on the nose. Very few of the many small stencil markings usually found on Lightnings are included on the sheet, however, so the model really looks 'barer' than one would expect in this scale. However, these small points apart, this is a very good kit. It is priced at £1.40. *C.O.E.*

Frog: 1:72 scale Vampire

MUCH the most requested jet fighter kit in our recent experience has been the DH Vampire, and now Frog have obliged with a very neat kit for this aircraft, the Mk 5 to be precise. In out-



line the model appears to be very accurate and it certainly captures the somewhat spidery look of the real aircraft. The canopy is particularly sharp and clear and the wing root intakes are well represented. However, Frog have made no great success of providing positive alignment for the tail booms and the modeller must take great care here to avoid a built-in droop on one side or other. The join lines on the booms are also fairly prominent and need careful rubbing down to eliminate. None of these small faults is too great to be overcome by the average modeller, however. Very neat transfers given in the kit offer a choice of RAuxAF or Swedish AF finishes and colour art on the box shows the paint schemes in the usual Frog pattern. Priced at 20p, the kit is good value and will obviously grace a lot of collections. Our sample came from Jones Bros of Chiswick who can supply by post at 5p extra for post and packing. *C.O.E.*

Minitanks: tank crews

TWO new sets released by Minitanks answer many requests from AFV modellers for tank personnel. Z-251 contains five German and five Soviet crewmen, while Z-252 supplies five each British and American men. These two sets come in what might be called 'semi-kit' form for two men in each group come in halves. These halves can be swapped around to give optional poses. The figures are beautifully moulded to depict in sharp detail the appropriate dress for each nation concerned. They are moulded in dark green plastic but no painting details are given. Characteristic poses are featured—for instance, one of the Russians carries signal flags. Though intended for HO scale (1:87) Minitanks, the figures are not too small for OO (1:76) scale models, such as the Airfix

Left: Two new Minitanks models, the M109 and M551 Sheridan.



tanks. These two sets are highly commended and should not be missed by anyone working in 1:76 or 1:87 scales. Price is 14p per set. *C.O.E.*

Minitanks: latest releases

SEVERAL new models have now been released in the 1:87 scale Minitank series, all featuring the excellent moulding, crisp detail and general scale accuracy for which the series is renowned. All come ready-assembled but as is usual some parts can do with cementing firmly in place and it is also a good idea to take the major components apart to clean up any rough edges or mould marks. Pride of place goes to a superb replica of the BB3 (SCUD) tactical rocket carrier of the Soviet Army which is based on the IS-3 tank chassis; we featured an Airfix kit conversion of this some years ago. The Minitanks model is a masterpiece of intricate detail work which allows the rocket to be raised and placed in the firing position. All the fine detail is splendidly reproduced and there is a sprue of parts which must be assembled to complete the hydraulic lift system for the rocket launcher. In this model, in fact, it is really advisable to take the launcher system apart and assemble it with care since the fragile parts will quite inevitably have been displaced in transit, as happened on our sample. Price of this model is 33p.

Two companion models are the M108 and M109 howitzer motor carriages of the US Army, the M109, of course, also being a current British item of equipment. The only possible improvement with these two models (differing only in armament) is to drill out the ends of the gun barrels which are 'solid' as purchased. Price of these models is 20p and 23p each respectively. Next come the M114/M114A1 full-tracked personnel carrier, another neat little piece of modelling. On our sample the prominent rear tow eyes were loose and needed cementing in place, as did the machine gun for the cupola. This item costs 17p. Last of our AFV samples was the M551 Sheridan, a particularly fine model which captures the look of the real thing to perfection. The great amount of fine surface detail on this vehicle is beautifully done. This model costs 20p.

Lastly, of interest to all military modellers working in small scale is an army tent. This is a small square 'marquee' type in khaki of typical appearance. Apart from its intended modern setting it would be equally suitable for just about any period of warfare. Price of this is modest at 11p.

Riko are the British distributors for Minitanks and most major model shops now hold stocks, certainly all those advertising in this magazine. *C.O.E.*

Minitrains: N scale rail cars

ROCO, the makers of Minitanks and Minitrains (narrow gauge) are now also making N scale equipment, at present a small range of American freight cars, mostly of specialised type. To the normal 1:160 scale of American and European N gauge, these are finely

detailed pieces, very free running with quality very much in the tradition of Minitanks. We had four of the cars for review, these consisting of one of the impressive three-decker autoveyors with a load of 12 assorted motor cars and in Santa Fe livery (£1.25), a Center-Flow Hopper in the red livery of Stauffer Chemicals, a Norfolk and Western covered hopper, and a Boston and Maine covered gondola (all 75p each). All these models are also available in alternative liveries and most of them seem to be different from items of American rail equipment made by other manufacturers in this small scale. These models are all of interest to anyone modelling the American scene in N gauge (for which a great number of locomotives and cars are available from other manufacturers). All are very free-running, finely moulded, and excellently finished, complete with tiny reporting marks and numbers. Standard N gauge couplers are fitted. Main model railway stockists are selling the Minitrains N range but Beatties of 112 Holborn, London WC1, can supply by post (postage extra) to anyone without a local stockist. *C.O.E.*

Starlux: 55 mm scale figures

STARLUX is a firm mass-producing plastic model soldiers in France rather than Britains do in the UK. There is no direct comparison, though, for Starlux aim more at the enthusiast and prices are much higher than Britains'. This is reflected also in the high standard of painting, which is exceptionally good for mass-produced figures, better, in fact, than many modellers could manage for themselves. The greater part of a big range is devoted to First Empire. From dozens of figures, the samples we had portrayed a mounted cuirassier of the 5th Regiment, and two foot figures, a Hussar



of the 3rd Regiment, and a Polish Guard Lancer. Size of these figures is a little bigger than usual, just about matching Historex in height, though the figures themselves are a little fatter. The plastic used is hard polystyrene so the paint takes well and conversions would be possible from the figures supplied. The finish on the horse we had was exceptionally realistic, though there was some rather prominent mould flash which needed scraping off. The figures themselves have a definite Gallic air about them and are well moulded. We thought that the hands, heads, and hats were, if

Continued on page 48

AIRFIX magazine

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Edited by Chris Ellis

Editor of *Airfix Magazine*

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- **The pick of Photopage:** Extra-large selection of aircraft and military pictures from the 'Photopage' files.

September 1971

Letters to the Editor

Bedford details

I WAS very interested in Gerald Scarborough's article on the Bedford QLT conversion as I have recently had the good fortune to prepare one of these vehicles for the London-Brighton Commercial Vehicle Run. I think this has given me a slight advantage over anyone wishing to model this prototype, but a few points and comments on the article in question.

Cap: The particular QLT that I have been working on had no cupola for the MG ring in the roof so those who choose to represent any earlier production model can use the kit roof without modification.

Seats: Although the centre aisle seats were missing for this example, the side seats were intact. They are in fact cushioned seats with a very dark green covering. The seats extend across the doors at the front and these fold up to allow the doors to open inwards. This makes modelling a little simpler.

Stowage at sides: Racks and stowage on nearside are as per drawing but off-side the POW carrier (small rack rear of the fuel tank) is replaced by a tool box of about the same size. An identical box is still fitted to modern Bedford RL trucks, so this can serve as a guide. Also on the offside, rear of the wheel, is a single jerrycan rack which takes one jerrycan stowed end on.

Tilt frame: Sorry but ours is rather different. The top longitudinal members are braced in 'triangle' shape fashion from the centre line in the two outer sections. The apex of each triangle shape so formed points to front and rear respectively.

S. Hider, Ryde, IOW.

Sheen effect

I HAVE recently been experimenting with the painting and finishing of my model aircraft and I thought that readers might like to hear the following tips.

With World War 2 aircraft I find that simply painting the model with matt camouflage colours is not enough and never captures that distinctive sheen which is always present in pictures of Spitfires and Hurricanes. And if you apply more than one coat it invariably obscures delicate surface detailing. However, this is my technique:

(1) After all painting is finished and all paint is really dry, I gently rub the surfaces with a wad of 'Duraglit'. This Duraglit acts as a 'rubbing compound' and removes a very thin layer of paint, thus evening out the brush marks and showing up the surface detail. Be careful not to rub too hard or too much paint will be removed: if this happens, simply repaint the affected area and rub down again—it's quite simple. Having finished with the Duraglit, I then give the model a hard rub with a soft cloth—and hey presto!—a sheen to be proud of!

(2) For these high gloss polyurethane finishes of the modern jets, I go one stage further. Having rubbed down with Dura-

Letters to the Editor selected for publication entitle the senders to each receive a free Airfix plastic construction kit of their choice. We are always pleased to receive your comments and pictures, which will be considered for publication. Submitted material and pictures can only be returned if accompanied by a stamped addressed envelope, and the Editor cannot accept responsibility for safe keeping of any such contributions, neither does he necessarily agree with comments expressed by correspondents in the letters column. Please note that any letters anticipating a reply MUST be accompanied by a SAE or stamp.

glit, I then apply a polish. I suppose you could use any wax household polish but I use Meltonian Neutral Shoe Cream—which is at all shoe shops, comes in jars and looks like white face cream. After liberally rubbing the cream all over the aircraft, I then give a hard rub with a cloth. Though this sounds a strange method, the results are superb, for you get a deep sheen which is realistically glossy—much better than using ordinary gloss paints.

C. L. Johnson, Romford, Essex.

Adding wing tips

I THOUGHT readers of the magazine might be interested in my method of adding new wing tips, tail surfaces, etc., to models. The method is simple and allows the plan view to be traced accurately from drawings before fixing it to the model. The wing of the model is first trimmed to a suitable line for a joint. The shape of the new wing tip (or rudder or whatever) can then be traced on to thin (I use 10 thou) plastic card and cut out. This is then stuck along the centre line thickness of the wing, following any dihedral. When the cement has firmly set, a liberal coating of body putty is applied. When dry, this is sanded to aerofoil shape. The difficulty of sticking balsa, of filling it and of preventing it fraying at this edges is thus avoided. I have used this method with great success, eg, on the wide chord rudders of Spitfires.

John Crocker, Blackwell, Somerset.

On very thin section wings and tails it is possible to use plastic card of greater overall thickness than the part in question—say 40 thou. After it is cemented in place as described above, it can be filed and sanded to match the adjacent aerofoil section.—EDITOR.

Wrong colours

I HAVE recently purchased the Hasegawa kit for the Curtiss SOC-3 Seagull, and would like to correct the colour scheme shown for the example depicted. This has apparently been taken from the appropriate Profile, which is also in error.

The tail colour shown for the kit aircraft—from VO-4—is red. This should be black. The four Observation squadrons were distinguished as follows:

- VO-1 Red tails
- VO-2 White tails
- VO-3 Blue tails
- VO-4 Black tails

The colours used by these battleship-based squadrons were the same as those used at the same time by aircraft based on aircraft carriers but, since Observation squadrons did not serve on carriers, there was no question of confusion.

There are many interesting and colourful markings available for this particular aircraft, particularly among the Cruiser Scout squadrons VCS-2 to 8, and a few were used as command aircraft, including the flagplane of the Commander-in-Chief, US Fleet. Modellers will find it worth while doing a little research into these colour schemes.

The same distinguishing colours were used by VO-1 to 4 when later equipped with the Vought OS2U-2 Kingfisher, of which Airfix have made such a delightful kit.

E. J. MacAdam, North Brickhill, Beds.

Coincidence

TWO years ago, having purchased the superb model of the Airfix Short Stirling, I made it up in the markings of the Stirling MG-K: N6095 stationed at RAF Leeming in Yorkshire and RAF Oakington in Cambridgeshire. This model I very proudly placed on the dressing table in my room.

Time passed, and then the time came when we wished for a house in the country, and so we put our house up for sale.

One morning, a gentleman named Mr Lewis and his family came to look over the house, and while looking in my bedroom he caught sight of my Stirling. He casually said, 'I flew Stirlings during the last war.' Then, seeing the squadron marking, he said, 'Oh, that's funny, that must be of the squadron I was in,' and then, moving closer, he exclaimed, 'Well, what do you know, that's the very plane I flew!'

Apparently, as I later found out, it was absolutely true, for this plane was involved in a memorable running battle with Me 109s off Borkum and, as a matter of fact, MG-K had been shot down. Mr Lewis, the pilot, safely returned to England after spending some while in the Channel!

Robin Smallman, Cranbrook, Kent.
M. J. F. Bowyer writes: N6095 was shot down in flames on 24.11.41. It had been detailed to attack a convoy off Borkum.

Useful formula

WHILE I was looking through some back issues of *Airfix Magazine*, I found, in the August 1970 issue, a letter by H. R. W. Morison, in which he gave figures for use by modellers working in 1:32 scale. It struck me that similar figures for other scales might be useful, but as these, if compiled in full, would take up a great deal of space, I decided that it would be better to take a general example which would cater for all scales.

Multiply the required length on the plan by the scale of the plan, and divide the result by the scale of the model which

is to be made. For example, if a length of 12 mm on a plan in 1:76 scale is to be used in a model in 1:48 scale, the calculation is $\frac{12 \times 76}{48}$, which works out to be 19 mm.

Allan Dickinson, Abergavenny, Mon.

Harvard colours

HAVING just received the June issue of the magazine, I would like to add some comments to your article on the T-6 Texan.

(1) Surely the overall colour of the SNJ-3 from NAS Corry should be orange-yellow? FS595-16368. This would be in keeping with US Navy training aircraft of the period.

(2) The underwing lettering on the Harvard IV of No 400 Sqn RCAF should read 'AA' starboard wing, 'K' port wing, readable from front of wing.

W. F. Power, Tehran, Iran.

American cavalry

MAY I say how much I have enjoyed the articles which have appeared in your magazine on converting Airfix figures? To the best of my knowledge, however, no one has ever come forward with information on the dress and equipment of the United States Cavalry during the Indian Wars.

The Airfix US Cavalry is a very good set of figures, but depicts the cavalymen of the Civil War period—some conversion work is necessary to turn out cavalymen of the 'Far West'.

From 1855 to 1872, the commonest hat amongst troopers of the western outposts was the 'Hardee' Hat, which can be made from the slouch hat of a Confederate soldier. It should be painted black, with a silver eagle on the upturned part of the hat, and crossed sabres on the front. The remainder of the uniform was dark blue jacket, dark grey shirt, light blue trousers, boots black or brown, and horse furniture brown. The standard weapon up to 1876 and beyond was the Springfield carbine, which can be adapted by removing a small sliver, 2 or 3 mm long, from the lower part of the rifle of the crawling cowboy. It sounds tricky, but it can be done! The standard cavalry side-arm of the period was the Colt revolver, again from the cowboy set.

After 1872, the cavalry dress is more or less as depicted by the Airfix figures, the only necessary modifications being the weapons. These were as for 1855-1872, but by this time the repeating rifle was taking the place of the carbine. The Winchester from the cowboy set, unmodified this time, provides an answer. I should, of course, mention that certainly by 1870, if not before, the sabre had been discarded as a weapon against the Indian. Whether officers carried a sword on patrol I cannot say—my advice would be give him a revolver and play safe—it is, after all, authentic.

By the 1880s, the Indians were almost completely subdued, and slightly more decorative dress appeared. The cavalry dress helmet of the 1880-1890 period was a 'spiked' type helmet (similar to the British 'Universal' type) with a horse-hair plume affixed to the top of the spike, and a large eagle on the front. The helmet was black, the eagle silver, and the plume white. Fatigue helmets of the period were very similar to British 'pith helmets', in varying shades of white and khaki. These



Of interest to model warship enthusiasts is this aerial view of reader C. Bramley's naval dockyard, very nicely modelled in 1:1200 scale. The ships include super-detailed and repainted versions of the Triang warship range (now discontinued but a few are available from Model Figures and Hobbies of Belfast as recently advertised). The other main source of models in this collection is from the old Eaglewall range, another discontinued line. The jetties, floating dock (bottom of picture), wharfs, tugs, cranes, and sheds are all from the Triang range, as is the 'sea'. These latter items are now, however, very much more scarce than the Triang ships themselves.

helmets can be easily made, using the heads of the Airfix 1914 German Infantry.

In the hot climate of the American South-West, many cavalymen fought in their dark grey shirts, and it is worthwhile depicting one or two figures like this, the figures with their sleeves rolled up being ideal. An Indian cavalry scout may be made by removing the crown of the head of the Indian holding a rifle and replacing it with the hat of the apron-clad Wagon Train figure.

Two conversions which I have not attempted, but which seem to me to be perfectly feasible, are: firstly, a cavalymen in his winter greatcoat. Parts used are the legs and head of a cavalry trooper and the torso of the greatcoated German officer from the 1914 Germans. The skirts of the greatcoat could be represented by tissue paper. The German officer's arms would have to be removed, and replaced with ones from the cavalry or cowboy sets. A second, slightly simpler conversion is for a trooper walking his horse—cavalry practice to save the horses on long patrols. Figure used is the Union soldier running, holding his rifle across his body, and his left hand in the air. With his trousers cut down to represent boots, and his bent leg straightened a little, he could be depicted holding on to his horse's bridle.

These notes are far from being complete or totally accurate, but I hope they may be of some help to anyone engaged in diorama work or wargames of this period.

W. Dunlop, Stonehaven, Kincardineshire.

French artillery

HAVING recently bought the Airfix French Napoleonic Artillery, I

noticed a few apparent mistakes.

The limber needs complete reconstruction with a second crosspiece behind the first and two longitudinal pieces. Although the set provides two horses per limber, there were in fact four pulling this type of gun (it is a 4 pdr). The two left ones being ridden means that they should have saddles added. One horse went each side of the drawbar and two more in front.

The figures provided should be painted either as men of the Horse companies or of the Young Guard. The reason for this is that both were issued with 4 pdr guns. The men with elevating levers should not be used, as elevation was by means of a screw.

The guns should have four handling levers added—pins with their head and point removed are excellent for this. They are placed inside the trail ends. Apart from these few mistakes this is a very good set.

Gordon Ballingall, Garforth, Nr Leeds.

Depending on the terrain, different numbers of horses were used, so both Airfix and Mr Ballingall are correct. It should be noted that the Airfix figures depict soldiers of the Foot Artillery.—EDITOR.

Israeli Half-Track

HAVING read the article by Gerald Scarborough in the April 1971 issue on converting the M3 Sherman to an Israeli Sherman as used in the Six Day War, I thought other readers might be interested in details for the conversion of the M3A1 half-track to the type used by the Israelis.

The half-track is built according to the instructions with the following exceptions: (1) Most Israeli half-tracks have no rear mudguards so these are cut off from the body section (part 22).

(2) The headlamps on the Airfix model are placed too far out from the front side of the half-track. These need to be located instead 3 mm inward from the holes cut for them and the holes filled with body putty.

(3) Part Nos 36, 37 and 38 can be omitted as nearly all Israeli types do not have the roller in front of the front bumper.

(4) Part Nos 40 and 42 can be omitted. The machine gun is instead located in just about any position behind the bulkhead (part 12) as in photographs of these vehicles there does not seem to be any standard position.

Most half-tracks had a machine gun located opposite the driver's side of the armoured screen (26). This can be made from sprue or the machine gun from the Russian T34 used, sawing off most of its locating lug.

If the armoured screen is to be partly or fully open it is necessary to cut the screen from the back along the line of hinges on the top of the screen, and make an upper frame bar from Microstrip.

Some half-tracks were covered and I made the cover from plastic card, dimensions for the two side pieces being 14 mm x 37 mm and the canopy being located over the back half of the truck. The driver's compartment was not always being covered.

If it is wished to cover the driver's compartment, however, the front part of part 39 can be sawn off and glued in position. Markings are A'marks decals.

Ian Clark, Upper Hutt, NZ.

New Kits—from page 44

anything, a little on the large size compared to the rest of the body but this does not really detract from the appearance. The average collector would really need only to touch up the paint finish and add a little more complexion to the face to have a first-class display piece. Each model comes in a card and clear plastic box which acts as its own display case.

The importers of the Starlux range are Beatties and the full range can be seen at their shops in London, Leeds and Manchester. They can supply by post and a full list of the range can be had from Beatties at 112 Holborn, London WC1 (or other Beatties' branches) by sending a large SAE. Standard prices are £1.44 for mounted figures and 95p for foot figures. C.O.E.

MDM: 40 mm scale figures

ANOTHER large range of plastic moulded figures imported from France by Beatties is made by MDM. These are to the more unusual, but established, 40 mm size. We were greatly impressed by both the presentation and the originality of the range, for they are

sold mostly in display groups rather like the pre-war Lineol figures we mentioned in a book review last month. One of our sample, for instance, portrays a complete 16-piece band of the 6th Foot Artillery Regiment in 1809. The moulding and painting of the figures is quite acceptable for factory-produced items, though not, perhaps, up to the standard of an expensive lead collectors' piece. The charm is inescapable, for the typical instruments include a serpent, triangle, and 'Jingling Johnny'. The drum-major wears a bearskin and the complete set, priced at £11.85, comes in an elegant clearview display case on a black plastic base. Another sample we had was a four-piece light infantry colour party (officer, bugler, ensign, and sergeant) of the Neuchâtel Battalion, 1807-1814. This is priced at £3.41. Finally, as an instance of a single figure, we had a sample of an Austrian Grenadier colour bearer, a beautifully painted piece with blanket roll and colourful flag, which comes in an oval display case priced at £1.05 complete. Other sets include magnificent horse-drawn gun teams and some spirited 'skirmish' displays with opposing troops in characteristic fighting positions, needing only background scenery to become dioramas in their own right. We found this range most attractive and the prices



Frog Skyhawk in RNZAF finish.

are very reasonable for ready painted sets of the standard offered. Coming in display cases as they do, they are most decorative; the band, for instance, occupies just 10 inches by 3 inches. A full list is available for anyone who sends a large SAE to Beatties. The range can be seen at the Beatties shops. C.O.E.

Frog: 1:72 scale Skyhawk

THE Skyhawk is basically a Hasegawa mould, boxed and marketed by Frog in Britain. It represents the A-4H/K variant and differs in many details from the early mark of Skyhawk already produced by Airfix. Options include a 'saddle tank' for the fuselage top and a range of alternative ordnance loads. Very imaginative transfers are included, one set for an Israeli A-4H and one set for an A-4K of the RNZAF. Detail is superb in best Hasegawa tradition. Price is 60p.

Our samples came from Jones Bros of Chiswick who can supply by post, postage extra. C.O.E.

Fallschirmjäger—from page 21

for immediate use.

Containers holding weapons were dropped with each section: in 1940, the most common weapon was still the 98K carbine, the Schmeisser MP 38 sub-machine gun being issued on a basis of 18 per rifle company. Heavy support was provided by the light machine gun MG 34 and the 5 cm mortar.

All Luftwaffe airborne troops wore the special grey-blue helmet secured by black leather straps passing in front of and behind the ears and under the chin. The swooping eagle emblem appeared on the left side and occasionally the black/white/red national colours on the right side. The helmet cover shown was rush-green but was only rarely worn in the 1940 campaign.

Organisation

Regimental: Each Regiment comprised three Parachute Rifle battalions of 550 men each, a Mountain Gun company (supporting artillery), an Anti-Tank company with one Engineer platoon, and signals, medical and other HQ units.

Parachute Rifle Battalion: The battalion had four companies and an organic Signals platoon. Three companies were rifle companies of three platoons. Each platoon, in addition to the 40 men equipped with carbine or MP 38, had a light machine gun section equipped with two MG 34s and a light mortar section with two 5 cm 1 Gr W 36 mortars.

The heavy company comprised:

- (1) 2 machine gun Platoons: each of 2 sections of 2 MG 34s on heavy tripod mounts.
- (2) 1 Heavy Mortar Platoon: 2 sections, each with two 81 mm mortars.

Modelling the 1940 Fallschirmjäger

20 mm scale: The best figures for conversion are the British Paratroops. The main alteration is an increase in smock length, which can be done with Plasticine hardened with banana oil. MG 34 gunners can be found in the Afrika Korps set (one machine-gunner and one crawling rifleman less rifle): the helmet and baggy trousers can be made up with Plasticine. The 5 cm mortar shown is made from Slater's Microrod and Plastikard; the base is 2 mm square, and the barrel 3 mm long.

54 mm scale: During this series, we shall look at three possible sources of figures, namely Airfix German Infantry, Almarks Panzer Grenadiers and Britains 'Dee-tail' German Infantry. For this first article we shall consider the Airfix figures.

First, the helmet. Fake 'Fallschirmjäger' helmets are often made in real life by cutting down the conventional Stahlhelm, so we can use this knowledge to make our helmet, cutting away the lower part as shown in the diagram. Be

careful not to cut away the face. Next, remove the patch pockets on the tunic and the buttons. Build up the bottom of the tunic into the smock length with Plasticine, using a paint-brush handle to put in folds. Lastly, extend the trousers over the long boots to make ankle boots, again using Plasticine. Set the Plasticine with banana oil, carefully brushing over the 'join' to make a smooth finish.

Most figures have some weapon, either carbine, MG 34 or MP 38; all will need the pistol holster as shown in the diagram. Make the hard backing from Plastikard (20 thou) and the rest out of Plasticine. Small ammunition pouches may be left on carbine-carrying figures—all gas-mask cylinders had green canvas covers, but these were often discarded on landing.

Later in the series, a separate article will deal with the heavy weapons and special vehicles and equipment of the Fallschirmjäger units, with special emphasis on 54 mm. Next month, we shall be dealing with the landings on Crete, and the further developments in uniform, organisation and weapons.

Below: In 20 mm scale the Airfix British Paratroops are very easily converted to Germans. Note the man with 5 cm mortar. There is an MG 34 crew from the Afrika Korps set, and two men with MP 38s.



AIRFIX magazine

New Books—from page 33

been aware of the book's existence but have been unable to obtain a copy. The book tells of the work of I. W. Boulton who, in the middle of the nineteenth century, was in business modifying engines discarded by mainline companies to make them more suitable for industrial operations. With its 90 illustrations, a mixture of drawings and photos, this 276-page book, in its charming period style, gives a fascinating account of the work of this remarkable man. Though it is unlikely to attract a very large readership, the book does give a revealing insight into one aspect of early railway operations, and as such is a welcome addition to the lists of railway literature.

MARITIME

Sailing Barges.

Frank G. G. Carr.
Conway Maritime Press, sole distributors
Patrick Stephens Ltd, 9 Ely Place,
London EC1N 6SQ.
£4.20.

ORIGINALLY published in 1931, this book is a reprint of the revised 1951 edition. *Sailing Barges* has become a standard work of reference on the subject, and this reprint will therefore be welcomed as it does full justice to its fascinating and nostalgic subject. Sailing barges are perhaps the most attractive and picturesque craft in the world today, and many aspects of their history and activities are covered. It deals with their building and rigging, the way they are handled, their racing, the long voyages which have been made in them, and their work in peace and war. There is a chapter on barges as yachts, and the present condition and hopes for survival of these vessels is discussed in the concluding pages. The book is amply illustrated with 67 photos and 33 drawings and plans and we feel sure that it will appeal to all lovers of sailing vessels, and will perhaps suggest some unusual models for enthusiasts to make.

MILITARY

Militärfahrzeuge.

W. J. Spielberger and Uwe Fiest.
Aero Publishers Inc, California, USA,
and distributed outside the American
continent by W. E. Hersant Ltd,
228 Archway Road, London N6.
£1.25 (post paid).

MOST recent in the Armor Series, this fine book is also one of the best since it is packed with pictures and details on all the most important German Army road vehicles of the World War 2 period. The printing quality is first-class, with nice sharp pictures and the text is snappier than in some earlier books in this series. All the basic facts are brought out well and we give full marks to this volume for the pictures alone. Even those who have not previously purchased books in this series will find this one worth considering, as there is relatively little elsewhere on the subject.

AFV Profile 28: S-Tank.

AFV Profile 29: M4 Medium (Sherman).
Profile Publications Ltd, Coburg House,
Sheet Street, Windsor, Berks.

35p each.

TWO latest tank Profiles follow the usual format and both will be invaluable to modellers. The volume on the Swedish S-Tank covers the complete concept of this unique vehicle from start to finish. It includes all variants and models and will be most useful for detailing and altering the Aurora 1:48 scale model of this vehicle. Author is R. M. Ogorkiewicz. The Sherman title, by Ellis and Chamberlain, gives a thorough coverage of development and main special purpose models.

Military Vehicle Prints, Series 24. 25p.

Military Vehicle Data 5. 25p.

Bellona/MAP Ltd, 13-35 Bridge Street,
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TWO new titles from the erstwhile Bellona range, now handled by MAP, these books follow the established Bellona format. The new book in the Prints series deals with the Renault FT tank of World War 1 in considerable depth, with scale drawings, data, and pictures giving a thorough coverage of the famous 'Mosquito' tank. Drawings are to both 1:76 and 1:48 scales. The Italian M11/39 tank is also included. The book on military vehicles this time deals exclusively with German transport

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PUBLISHED on September 27 is the first *Airfix Magazine Annual*, a book with the same page size as *Airfix Magazine*, packed with features by regular contributors and well-known modelers. In many cases these are items which would be too long to include in *Airfix Magazine*. For example, there is a lengthy article on uniforms of the flying services by Robert C. Gibson, which should answer the many requests we get for coverage of this subject. Model photography, markings for the Freedom Fighter, building desert dioramas, modelling the LRDG/SAS patrol Jeep, and an extended 'Jumbo-size' edition of Photopage (both military and aircraft) are major features but there are many other subjects, 20 big features in all. Price is £1.25. In November comes another book of major interest, *Spitfire*, first in a new 'Classic Aircraft' series. This book is in two parts. In the first, Roy Cross, well-known aviation writer and artist, gives a very detailed history of the aircraft and its development, and in the second part, *Airfix Magazine* regular contributor, Gerald Scarborough, tells how to detail and convert the Airfix 1:24 scale Spitfire kit. Original works drawings and many hitherto unpublished pictures, plus very complete technical drawings, over 200 illustrations in all, make this a 'must' for all interested in aircraft.

CORRECTIONS

On the Spitfire VIII conversion article in the August issue, Spitfire JF447 had the spinner in red not blue. The 'winged sword' insignia of 601 Sqn should have been shown in red and white and not black. Undersides of the aircraft were Azure not Cerulean blue. The codes were outlined in roundel blue or black and the colour 'sand' can also be interpreted as mid stone. In the June issue on Harvards the 400 Sqn RCAF aircraft had blue and white instead of red and white stripes on the cowings as shown.

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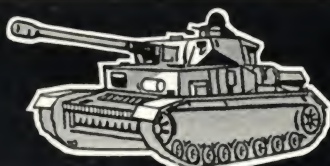
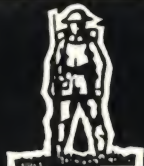
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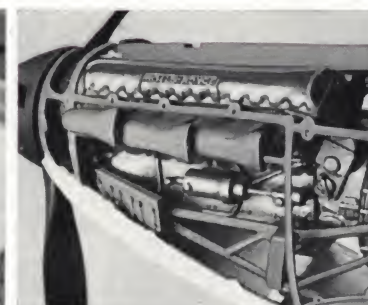


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